

SEQUENCE LISTING

<110> Bhatia, Ajay
 Probst, Peter

<120> COMPOUNDS AND METHODS FOR TREATMENT
 AND DIAGNOSIS OF CHLAMYDIAL INFECTION

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<140> US

<141> 2001-12-05

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<213> Chlamydia trachomatis

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<213> Chlamydia trachomatis

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<212> DNA

<213> Chlamydia trachomatis

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<212> DNA

<213> Chlamydia trachomatis

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<212> DNA

<213> Chlamydia trachomatis

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<210> 9
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665

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<210> 10
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<213> Chlamydia trachomatis
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<210> 13
<211> 1171
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<213> Chlamydia trachomatis
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<213> Chlamydia trachomatis
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<212> DNA
<213> Chlamydia trachomatis serovar E
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<211> 516
<212> DNA
<213> Chlamydia trachomatis serovar E
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<210> 17
 <211> 723
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 18
 <211> 1377
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 19

<211> 1736

<212> DNA

<213> Chlamydia trachomatis serovar E

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<210> 20

<211> 1135

<212> DNA

<213> Chlamydia trachomatis serovar E

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<210> 21

<211> 731

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 21

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<210> 22

<211> 1181

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 22

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<213> Chlamydia trachomatis serovar E

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<210> 27

<211> 1797

<212> DNA

<213> Chlamydia trachomatis serE

<400> 27

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<210> 28

<211> 1983

<212> DNA

<213> Chlamydia trachomatis serE

40007693 "1233331

<400> 28

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 gagtttggtg atggggaacg tagtctcgca gaatctcaag agaatgcgtt tagaaaaacg 1920
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 taa 1983

<210> 29

<211> 1224

<212> DNA

<213> Chlamydia trachomatis serE

<400> 29

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 tatccatagc tcatccttgg catgggccag tattaacacg cgatgattat gaatctcttt 240
 gttgctatat agaaatcact ccagccgact ccgttaaatt cgaactggat aaagaaactg 300
 gtatcctaaa agtggatcgg ccacaaaagt tttctaactt ttgtccttgc ttatacgggc 360
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 cggaagaagc cgatgataaa atcatcgctg ttctagaaga tgatttagtc tatggcaata 600
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 cctataaagc tactccagaa agcttaattc aagcaaaacc agctaaaatt gaaattgtag 720
 gtttatacgg caaaaaagaa gctcaaaaag tcatctgctt tgctcacgaa gactattgca 780
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cctcctaacc aagttttttt catcctaggg gactttatga agcaaataga taactttgaa 900
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ggattgcaag ctgttcgtga gcgtcctgga atgtacattg gtgatacagg agttaccgga 1140
ttgcatcact tggtttatga agtggtggat aacagtatcg atgaggcaat ggcgggtttt 1200
tgtaccgagg tcgttggtcg cata 1224

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<210> 30
 <211> 883
 <212> DNA
 <213> Chlamydia trachomatis serE

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<400> 30
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catcgcaagt tgcttaacaa cctggaaggt gttcgtcata tgaactctct cccagggtt 180
ttaattgtaa ttgaccggg ctatgagcgc attgctgtcg cagaagctgg aaaactaggc 240
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taattgctgc actcgttgat gaacgtggtg cggcacttgt tgaagtcaac gttgaaactg 780
attttggtgc taacaacagt gttttccgag cattcggttac aggtttgtta tccgatcttc 840
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<210> 31
 <211> 393
 <212> DNA
 <213> Chlamydia trachomatis serE

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<400> 31
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aattctttgc ttcagagaga tggttgggtg gcatgttgac taacatggcg accatcagaa 180
actctgtgaa gacattgaac agaattgaat tggatcttga agcttctaatt tctggtctta 240
cgaaaaaaga gatcgcttta ttaacgaaaa gacatcgcaa gttgcttaac aacctggaag 300
gtgttcgtca tatgaactct ctcccagggc ttttaattgt aattgacctg ggctatgagc 360
gcattgctgt cgcagaagct ggaaaactag gca 393

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<210> 32
 <211> 2577
 <212> DNA
 <213> Chlamydia trachomatis serE

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<400> 32
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ccgattttatt ccgtaactgt ttctctcgta atagaggcac tactactacg ccatctcgaa 120
ctgttatcac tcaggcagat atttatcatc cgactatttc tggacaagga gctcaacct 180
ttgtctctac aggagataag aaattagata gcgcaattat tcaagcagat ttgctgctgc 240
agaataaaca gactttggct acacatatc aaagtaagct aggttctatg gagggacaat 300
ctcctcaaga ttataaagct ggtgcgtata gtgcgctaag attgatgctg tttactccag 360
gcgaaactac tgtgagtagc gagcgggaac gtcaagcgtg cgttacgggt cgggatctct 420

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gggaacagggc tgcaggagat cttgctacca atgggaatac agatgggctt atgttaatgg 480
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 ctgtaaaggg tacgtttact gatgagaacg aggctacaga tcctacggta gatgccattt 600
 tagatttagc agcaaaaatc gatgcgacgg aattctctag tcctggttca gggcaagtca 660
 ttcttaatta taataggaaat tatggacaag tcgtttttaga aaacgaggag atgaaccttc 720
 ttgttttaga agatcaaaaat gggcaagatc ctcaacgtgt tcaagataac tcaaaagagt 780
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 caactattaa gaggaagtag tggtagtag cataagccct atagggggga attctgggcc 960
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 tatttggaag cgtcgtgttg cacgaaggaa tgaaaactat gatgtgaaaa aagcagaaga 1260
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 aacaagagca accgtcgaat tcatggttcg ctgcaatctt tcggaagaga gagcgggcta 2520
 gaaaacgaca aacaattaat aagttgcttt tgttaaaaag tatcctattt tttgaac 2577

<210> 33
 <211> 554
 <212> DNA
 <213> Chlamydia trachomatis serE

<400> 33
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 tttttttaaa ttaagtgtac ttccagctct tctcggactc tggctatttt ttactcctaa 180
 tattcttaac tatttggtatt cttctgttat tttatcagat aaaatttgcg gcgtcctttt 240
 aattttatta tcagctttat cctttttataa tctgttatt ttgcaactag gcatttttat 300
 tgggctctgg gtttctttct ttcttctgtc ttccgacctc cttctcttag tatttgctca 360
 tgattcgcta ctaggttttg ccacactagc tattattttt ctactcccta atcgctcga 420
 agatctagaa gttggtccta ctattccaga aacttgccat tataatcctt cttccggagg 480
 gaaaagagct gcggttctta tttttgcttt tgtaggatgg ttacaaagtc gctacttaac 540
 ttccgcggca cgag 554

<210> 34
 <211> 1433
 <212> DNA

<213> Chlamydia trachomatis serE

<400> 34

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tccagaacgt cgacactggt ttttggtctg acatgagcaa tctctcagac gttgtattat 180
ccagagagat tcaaacagga cttcgagcac gagctacttt ggaagaatcc atgccgatgt 240
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tttttgaagc agcacttcaa gaagtttagg cagaccataa cccagcgat tcccgttact 1380
acataagctg cttgtgtcca catggttctt tcaccaagca ggtgagtaag tag 1433

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<210> 35

<211> 196

<212> DNA

<213> Chlamydia trachomatis

<400> 35

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ctcgtgccga tgatacagca gtcgcagtga atcaagggtgg taaacgcaag ggagctgtat 60
gcgtctattht agaagtttgg cacctcgact acgaagattht ccttgaattg agaaagaata 120
caggggatga gcgtcgacgg gctcatgatg tcaatatagc tagctggatt ccagatcttht 180
tcttcaaacg tttaaa 196

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<210> 36

<211> 1990

<212> DNA

<213> Chlamydia trachomatis

<400> 36

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ttcactaggc tcatgagcct ctaactcttc tggagtaact cctagagcaa acacaaactg 60
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taacttacgc gcctctaaat catcgcaacg actatgaatc gcagataaat atttaggaaa 180
ggctttgata tgtaaaataat agtctttggc atacgcctgt aattgctctt tagtaagctc 240
ccccttcgac catttcacat aaaacgtgtg ttctagcata tgcttatttt gaataattaa 300
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aacggtgttt gctcattccc ctctcccata caaacaacag ccgcaactgc taaggcatct 540
acaagattac tttgcgtcat ctgtaagaga cgaccgaaac aatctagcga tccatatag 600
ttgtgtaatg gagaaaaatcc ataccaaacac agcccgatcc ccagtactcc acgcccatt 660

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ggagtagtat ggctatctgt aatgattacg cctagctctt tcaactcgaaa ataatttctt 720
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 tgggtccgtat tgcattcatc aatccctgca gaaggaatca aaataccttc ttttttcgtt 840
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 caacgcaaca tttgctcaat aggagattct tcataagaaa gtacacaatc tgggtcttgg 1920
 ggcagcgaac acgaatgatt tattaatagc cgtagcccaa actccttcgc caaatgagcc 1980
 atttccaaag 1990

<210> 37
 <211> 2093
 <212> DNA
 <213> Chlamydia trachomatis

<400> 37
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 atcctagtct tgtggctgca gattttaaagc tttccgaaca cttttccac aaggatggc 180
 aacgtatcca acaattacat cctttaggag tcggagcgcc ttcctacag tctactggg 240
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<210> 38
<211> 1834
<212> DNA
<213> Chlamydia trachomatis
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<210> 39
<211> 1180
<212> DNA
<213> Chlamydia trachomatis
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attatttttg ttaaaagaaa tacttaatga gttttattta attaacgaaa cgaaaagctt 180
gctaataaaa attatttcaca cagctatcga atttgctccg gtaatcaaaq ccqqaqqcct 240
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 agctttatac tgttcagatt tcgtgactac ggtttctcct acatacggca aagaaattct 840
 tgaagattat tccgattacg aaattcacga tgccattact gctagacaac atcatctccg 900
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 gaaaaactac actaaagagc ttttcgagac ccttcaatt ttttttgaag ctaaagccga 1020
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<210> 40
 <211> 1297
 <212> DNA
 <213> Chlamydia trachomatis

<400> 40
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 tttgttgat ataggataag aaattctctg aagataaaga ggctcctcca actaaaagac 120
 cattaacatc agggcagagg gcaagtgcgc gagcattatc ggctttcaca gatcctccgt 180
 aaagaatggg ggtgcgttcc gcaatatctt tggaaaagag agaagcaatc gtttttctac 240
 agaaagcatg ggtttcctga actagatcag gatgagctac ttttcgggtg cctatagccc 300
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 tcagttgatt taaaagaata tcttgagttg ctccagattc ttgttcttct aaagtttctc 420
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 caggattttg ttcataaag atatgaatgc tttcggaatg tccgatgaga acaaaatcga 540
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 catgagtggt ttgggctcca agaaagatgg gggaatcgtc tacagcttgt tgacaagctg 660
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<210> 41
 <211> 1141
 <212> DNA
 <213> Chlamydia trachomatis

<400> 41
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 tatcatttcc ctatactggt ataggagatc cgagtgggac tactgttttt tctgcaggag 180
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<210> 42
 <211> 822
 <212> DNA
 <213> Chlamydia trachomatis

<400> 42
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 cttcattttt tttaaagtaa aatgatgcat gtagccgcct gttggccctg ggagataacg 480
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<210> 43
 <211> 1634
 <212> DNA
 <213> Chlamydia trachomatis

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 gtaggtaggg ccattatcca ctagggtaac tacaggagcg taaatagctc cgccataatt 300
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 cctttgattc ctattggaga gacaacggca gtatgggctt gctctaattgt aaataatcta 1560
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 aatgggggtga gcat 1634

<210> 44
 <211> 1862
 <212> DNA
 <213> Chlamydia trachomatis

<400> 44
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 cg 1862

<210> 45
 <211> 1668

<212> DNA

<213> Chlamydia trachomatis

<400> 45

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 tgtgatgtgc agtggctaag ctttcaagaa ggtttacgcc ttttaaattt cccagaaatt 540
 cgtaatatgt ttacggaagc agatgaattt gttcaaagtt atctatttgc ttcataaagt 600
 cccctaggat gaaaaaaaact tggttaggag gggccgttgt ggaatctccc acaacagcct 660
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<210> 46

<211> 2010

<212> DNA

<213> Chlamydia trachomatis

<400> 46

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2044

<210> 48

<211> 3734

<212> -DNA-

<213> *Chlamydia trachomatis*

<400> 48

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 ccaactcttg gcaa 3734

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 <211> 2937
 <212> DNA
 <213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

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 <213> Chlamydia pneumoniae

<400> 54

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<211> 3135

<212> DNA

<213> Chlamydia pneumoniae

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<213> Chlamydia pneumoniae

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<210> 58

<211> 1086

<212> DNA

<213> Chlamydia pneumoniae

<400> 58

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1086

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 <211> 591
 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 61
 <211> 1983
 <212> DNA

<213> Chlamydia pneumoniae

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<211> 1860

<212> DNA

<213> Chlamydia pneumoniae

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 <211> 1956
 <212> DNA
 <213> Chlamydia pneumoniae

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 <211> 264
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 <213> Chlamydia pneumoniae

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<210> 65
 <211> 978
 <212> PRT
 <213> Chlamydia pneumoniae

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 20 25 30
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 35 40 45
 Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Phe Ile
 50 55 60
 Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu Thr
 65 70 75 80
 Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu Ser
 85 90 95
 Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe Thr
 100 105 110
 Gly Asn Gln Ser Thr Gly Leu Gly Glu Leu Ile Tyr Gly Lys Asp Ile
 115 120 125
 Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val Ala
 130 135 140
 Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr Thr
 145 150 155 160
 Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr Val
 165 170 175
 Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn Phe
 180 185 190
 Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile Asn
 195 200 205
 Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly Gly
 210 215 220
 Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser Gly
 225 230 235 240
 Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly Val
 245 250 255

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Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ile Cys
 260 265 270
 Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln Gly Lys Cys Thr
 275 280 285
 Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala Ile Tyr Ala Glu
 290 295 300
 Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu Asp Ser Asn
 305 310 315 320
 Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys Val Leu Asn Ile
 325 330 335
 Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg Ala Glu Lys Gly
 340 345 350
 Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro Ala Lys Gln Thr
 355 360 365
 Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asp Ile Ala Phe Gln Gly
 370 375 380
 Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala Ile Thr Val Glu
 385 390 395 400
 Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly Gly Ser Arg Leu
 405 410 415
 Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr Thr Ser Pro Ser
 420 425 430
 Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser Gly Ser Val Val
 435 440 445
 Phe Thr Ser Lys Gly Leu Ser Thr Glu Leu Leu Pro Ala Asn
 450 455 460
 Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala Ser Gly Glu Leu
 465 470 475 480
 Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly Phe Ala Thr Gln
 485 490 495
 Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr Leu Gly Leu Ala
 500 505 510
 Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr Ile Gly Lys Leu
 515 520 525
 Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe Val Ser Ala Ser
 530 535 540
 Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly Ala Leu Val Leu
 545 550 555 560
 Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val Ser Leu Gln Ser
 565 570 575
 Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala Thr Val Thr Lys
 580 585 590
 Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser His Tyr Gly Tyr
 595 600 605
 Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu Leu Ile Pro Ala
 610 615 620
 Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ala Asn Thr Leu
 625 630 635 640
 Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser Thr Tyr Ile Leu
 645 650 655
 Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser Leu Trp Ile Ser
 660 665 670
 Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln Asp Val Leu Leu
 675 680 685
 Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala Leu Gly Ala Tyr
 690 695 700
 Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe Ser Gly Arg Tyr

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705 710 715 720
 Gly Gly Tyr Gln Ala Ala Leu Ser Met Asn Tyr Thr Asp His Thr Thr
 725 730 735
 Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly Lys Thr Asn Ala Asn Pro
 740 745 750
 Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr Leu Leu Ser Phe Phe Gly
 755 760 765
 Gln Phe Pro Ile Val Thr Gln Lys Ser Glu Ala Leu Ile Ser Trp Lys
 770 775 780
 Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu Asn Thr Thr Tyr Leu Arg
 785 790 795 800
 Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln Trp His Asn Asn Ser Tyr
 805 810 815
 Tyr Val Leu Ile Ser Ala Glu His Pro Phe Leu Asn Trp Cys Leu Leu
 820 825 830
 Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu Ser Gly Phe Ile Ser Ala
 835 840 845
 Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe Thr Glu Thr Gly Asp Leu
 850 855 860
 Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr Asn Val Ser Leu Pro Ile
 865 870 875 880
 Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe Lys Lys Ala Pro Ser Thr
 885 890 895
 Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp Ile Tyr Arg Val Asn Pro
 900 905 910
 His Asn Ile Val Thr Val Val Ser Asn Gln Glu Ser Thr Ser Ile Ser
 915 920 925
 Gly Ala Asn Leu Arg Arg His Gly Leu Phe Val Gln Ile His Asp Val
 930 935 940
 Val Asp Leu Thr Glu Asp Thr Gln Ala Phe Leu Asn Tyr Thr Phe Asp
 945 950 955 960
 Gly Lys Asn Gly Phe Thr Asn His Arg Val Ser Thr Gly Leu Lys Ser
 965 970 975
 Thr Phe

<210> 66
 <211> 266
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 66
 Met His Ser Lys Phe Leu Ser Arg Arg Lys Lys Asn Ser Ser His Lys
 5 10 15
 Glu Glu Thr Ser Trp Asp Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val
 20 25 30
 Gln Asp Lys Gly His Tyr Tyr His Arg Glu Thr Ile Leu Pro Gln Leu
 35 40 45
 Leu Pro Ser Leu Thr Leu Gly Ser Lys Ser Ser Val Leu Asp Ile Gly
 50 55 60
 Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr
 65 70 75 80
 Leu Gly Ile Asp Ile Ser Ser Arg Leu Ile Ala Leu Ala Lys Lys Met
 85 90 95
 Arg Ser Val Asn Ser His Gln Phe Lys Val Ala Asp Leu Ser Lys Arg
 100 105 110
 Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu

115 120 125
 Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala
 130 135 140
 Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
 165 170 175
 Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu Ser Pro Met Lys Ile
 180 185 190
 Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser Pro Ser Thr Leu Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu Leu Ser Ser His Gly
 210 215 220
 Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser Ser Lys Thr Ser Thr
 225 230 235 240
 Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg Lys Glu Phe Pro Leu
 245 250 255
 Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 260 265

<210> 67
 <211> 83
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 67
 Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser Arg Lys Ile Gly Thr
 5 10 15
 Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe Leu Asp Glu Ile Lys
 20 25 30
 Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys Lys Tyr Ile Lys Val
 35 40 45
 Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala Ile Tyr Phe Val Asp
 50 55 60
 Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp Gly Ile Thr Thr Phe
 65 70 75 80
 Leu Phe Gly

<210> 68
 <211> 394
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 68
 Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala

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<210> 69
<211> 476
<212> PRT
<213> Chlamydia pneumoniae
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<400> 69															
Met	Arg	Ile	Val	Gln	Val	Ala	Val	Glu	Phe	Thr	Pro	Ile	Val	Lys	Val
				5					10					15	
Gly	Gly	Leu	Gly	Asp	Ala	Val	Ala	Ser	Leu	Ser	Lys	Glu	Leu	Ala	Lys
			20					25					30		
Gln	Asn	Asp	Val	Glu	Val	Leu	Leu	Pro	His	Tyr	Pro	Leu	Ile	Ser	Lys
		35					40					45			
Phe	Ser	Ser	Ser	Gln	Val	Leu	Ser	Glu	Arg	Ser	Phe	Tyr	Tyr	Glu	Phe
	50					55					60				
Leu	Gly	Lys	Gln	Gln	Ala	Ser	Ala	Ile	Ser	Tyr	Ser	Tyr	Glu	Gly	Leu
	65				70					75					80

Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
 85 90 95
 Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
 100 105 110
 Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
 115 120 125
 His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
 130 135 140
 Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
 145 150 155 160
 Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
 165 170 175
 Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
 180 185 190
 Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
 195 200 205
 Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
 210 215 220
 Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
 225 230 235 240
 Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
 245 250 255
 Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
 260 265 270
 Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
 275 280 285
 Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
 290 295 300
 Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
 305 310 315 320
 Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
 325 330 335
 Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
 340 345 350
 Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
 355 360 365
 Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
 370 375 380
 Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
 385 390 395 400
 Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
 405 410 415
 Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
 420 425 430
 Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
 435 440 445
 Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
 450 455 460
 Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser
 465 470 475

<210> 70
 <211> 346
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 70
 Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val Glu Val Ser
 5 10 15
 Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
 Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile Glu Leu
 50 55 60
 Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln Met Thr
 145 150 155 160
 Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser Ser Glu
 165 170 175
 Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln Glu Glu
 245 250 255
 Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu Tyr Ala
 260 265 270
 Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met Ser Glu
 305 310 315 320
 Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Thr
 325 330 335
 Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
 340 345

<210> 71
 <211> 1044
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 71
 Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys Arg Asn Gly
 5 10 15
 Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala Leu Glu Ala
 20 25 30

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Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro Leu Pro Lys
 35 40 45
 Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val Val Lys Glu
 50 55 60
 Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val Glu Arg Ile
 65 70 75 80
 Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu Gln Asp Val
 85 90 95
 Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala Glu Arg Gly
 100 105 110
 Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly Gly Ser Ala
 115 120 125
 Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys Ala Phe Arg
 130 135 140
 Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr Leu Ser Glu
 145 150 155 160
 Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu Ser Leu His
 165 170 175
 Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile Val Glu Lys
 180 185 190
 Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn Tyr Ile Leu
 195 200 205
 Tyr Arg Glu Ala Arg Ala Arg Ala Asn Lys Asp Gln Asp Gly
 210 215 220
 Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val Gln Lys Glu
 225 230 235 240
 Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu Lys Arg Phe
 245 250 255
 Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser Gln Leu Leu
 260 265 270
 Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys Glu Asp Glu
 275 280 285
 Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile Glu Arg Glu
 290 295 300
 Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser Ser Leu Tyr
 305 310 315 320
 Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu Ser Glu Ile
 325 330 335
 His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu Glu Tyr Arg
 340 345 350
 Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu Ser Glu Val
 355 360 365
 Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly Val Gln Asn
 370 375 380
 Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg Leu Glu Thr
 385 390 395 400
 Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala Leu Asn Glu
 405 410 415
 Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn Leu Leu Ser
 420 425 430
 Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn Ser Gly Met
 435 440 445
 Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val Lys Asp Asp
 450 455 460
 Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu Leu Ser Lys
 465 470 475 480
 Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg Ala Thr Gly

485									490				495			
Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	Ile	Pro	Phe	
			500							505				510		
Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	Gly	Gly	Lys	
			515				520							525		
Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	Leu	Asp	Tyr	
			530				535				540					
Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	
			545				550				555				560	
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	
			565				570							575		
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	
			580				585							590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu	
			595				600				605					
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys	
			610				615				620					
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu	
			625				630				635				640	
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	
			645				650							655		
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	
			660				665							670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	
			675				680				685					
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu	
			690				695				700					
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val	
			705				710				715				720	
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu	
			725				730				735					
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu	
			740				745				750					
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser	
			755				760				765					
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser	
			770				775				780					
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys	
			785				790				795				800	
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu	
			805				810				815					
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp	
			820				825				830					
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser	
			835				840				845					
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly	
			850				855				860					
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser	
			865				870				875				880	
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys	
			885				890				895					
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys	
			900				905				910					
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu	
			915				920				925					
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile	
			930				935				940					

Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly Val Ser Leu
 945 950 955 960
 Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser Asn Met Tyr
 965 970 975
~~Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr Leu Arg Ser~~
~~980 985 990~~
 Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile Asn Lys Arg
 995 1000 1005
 Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile
 1010 1015 1020
 Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys
 1025 1030 1035 1040
 Glu Ser Cys Gln

<210> 72
 <211> 461
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 72
 Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu Ser Ile Leu
 5 10 15
 Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn Ser Ser Val
 20 25 30
 Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys Lys Pro Gln
 35 40 45
 Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg Ala Arg Lys
 50 55 60
 Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg Ala Gln Lys
 65 70 75 80
 Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys Asn Glu Ile
 85 90 95
 Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg Asn Lys Arg
 100 105 110
 Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe Ser Asn Leu
 115 120 125
 Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln Lys Thr Ser
 130 135 140
 Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn Glu Ser Gln
 145 150 155 160
 Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser Ala Ala Pro
 165 170 175
 Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val Glu Arg Thr
 180 185 190
 Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val Gln Val Gln
 195 200 205
 Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln Leu Ala Ser
 210 215 220
 Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser Leu Arg Glu
 225 230 235 240
 Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser Asn Pro Glu
 245 250 255
 Val Ser Val Gln Arg Gln Lys Glu Glu Leu Lys Glu Leu Val Ala
 260 265 270
 Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala Leu Glu Ala

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275 280 285
 Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val Thr Ser Thr
 290 295 300
 Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser Arg Arg Asn
 305 310 315 320
 Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser Ser Cys Lys
 325 330 335
 Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr Pro Ser Glu
 340 345 350
 Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu Val Arg Lys
 355 360 365
 Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe Tyr Arg Asn
 370 375 380
 Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn Gln Tyr Ser
 385 390 395 400
 Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys Val Ser Lys
 405 410 415
 Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val Val Thr Val
 420 425 430
 Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala Thr Glu Ser
 435 440 445
 Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
 450 455 460

<210> 73
 <211> 576
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 73
 Met Thr Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile
 5 10 15
 Lys Val Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val
 20 25 30
 Leu Gln Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly
 35 40 45
 Ile Val Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile
 50 55 60
 Leu Gly Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly
 65 70 75 80
 Thr Ile Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val
 85 90 95
 Asn Gln Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys
 100 105 110
 Ala Leu Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His
 115 120 125
 Ser Val Val Lys His Leu Lys Lys Leu Asp Leu Asn Leu Ser Lys Thr
 130 135 140
 Gln Arg Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser
 145 150 155 160
 Leu Gly Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu
 165 170 175
 Lys Met Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr
 180 185 190
 Gln Glu Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu
 195 200 205

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Leu Ser Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile
 225 230 235 240
 His Thr Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val
 245 250 255
 Met Val Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile
 260 265 270
 Leu Leu Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser
 275 280 285
 Tyr Leu Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp
 290 295 300
 Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln
 305 310 315 320
 Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu
 325 330 335
 Lys Glu Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln
 340 345 350
 Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg
 355 360 365
 Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp
 370 375 380
 Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala
 385 390 395 400
 Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys
 405 410 415
 Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile
 420 425 430
 Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
 435 440 445
 Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
 450 455 460
 Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Val Glu Gly Val
 465 470 475 480
 Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln
 485 490 495
 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
 500 505 510
 Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu
 515 520 525
 Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr
 530 535 540
 Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile
 545 550 555 560
 Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 565 570 575

<210> 74
 <211> 361
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 74
 Met Gln Gln Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly

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20 25 30
 Leu Phe Met Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser
 35 40 45
 Ser Thr Lys Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val
 65 70 75 80
 Phe Ala Arg Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Ile Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110
 Val Gln Glu Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Leu Asn Thr Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro
 130 135 140
 Gln Lys Asp Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu
 145 150 155 160
 His Asn Val Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg
 165 170 175
 Ala Ile Ala Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser
 180 185 190
 Thr Gly Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu
 195 200 205
 Lys Phe Leu Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys
 210 215 220
 Glu Ile Val Gly Gln His Gln Gly Ala His Tyr Tyr Thr Ile Gly Gln
 225 230 235 240
 Arg Arg Gly Leu Asp Leu Gly Gly Ser Glu Lys Pro Cys Tyr Val Val
 245 250 255
 Gly Lys Asn Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp
 260 265 270
 His Pro Gln Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp
 275 280 285
 Phe Thr Pro Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr
 290 295 300
 Arg Ser Pro Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu
 305 310 315 320
 Val Lys Val Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln
 325 330 335
 Thr Ile Ala Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile
 340 345 350
 Asp Val Pro Met Ile Pro Ser Glu Gly
 355 360

<210> 75
 <211> 1609
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 75
 Met Val Ala Lys Lys Thr Val Arg Ser Tyr Arg Ser Ser Phe Ser His
 5 10 15
 Ser Val Ile Val Ala Ile Leu Ser Ala Gly Ile Ala Phe Glu Ala His
 20 25 30
 Ser Leu His Ser Ser Glu Leu Asp Leu Gly Val Phe Asn Lys Gln Phe
 35 40 45

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Glu	Glu	His	Ser	Ala	His	Val	Glu	Glu	Ala	Gln	Thr	Ser	Val	Leu	Lys
	50					55					60				
Gly	Ser	Asp	Pro	Val	Asn	Pro	Ser	Gln	Lys	Glu	Ser	Glu	Lys	Val	Leu
65					70					75					80
Tyr	Thr	Gln	Val	Pro	Leu	Thr	Gln	Gly	Ser	Ser	Gly	Glu	Ser	Leu	Asp
				85					90					95	
Leu	Ala	Asp	Ala	Asn	Phe	Leu	Glu	His	Phe	Gln	His	Leu	Phe	Glu	Glu
			100					105					110		
Thr	Thr	Val	Phe	Gly	Ile	Asp	Gln	Lys	Leu	Val	Trp	Ser	Asp	Leu	Asp
		115					120					125			
Thr	Arg	Asn	Phe	Ser	Gln	Pro	Thr	Gln	Glu	Pro	Asp	Thr	Ser	Asn	Ala
	130					135					140				
Val	Ser	Glu	Lys	Ile	Ser	Ser	Asp	Thr	Lys	Glu	Asn	Arg	Lys	Asp	Leu
145					150					155					160
Glu	Thr	Glu	Asp	Pro	Ser	Lys	Lys	Ser	Gly	Leu	Lys	Glu	Val	Ser	Ser
				165					170					175	
Asp	Leu	Pro	Lys	Ser	Pro	Glu	Thr	Ala	Val	Ala	Ala	Ile	Ser	Glu	Asp
			180					185					190		
Leu	Glu	Ile	Ser	Glu	Asn	Ile	Ser	Ala	Arg	Asp	Pro	Leu	Gln	Gly	Leu
		195				200					205				
Ala	Phe	Phe	Tyr	Lys	Asn	Thr	Ser	Ser	Gln	Ser	Ile	Ser	Glu	Lys	Asp
	210					215					220				
Ser	Ser	Phe	Gln	Gly	Ile	Ile	Phe	Ser	Gly	Ser	Gly	Ala	Asn	Ser	Gly
225					230					235					240
Leu	Gly	Phe	Glu	Asn	Leu	Lys	Ala	Pro	Lys	Ser	Gly	Ala	Ala	Val	Tyr
				245					250					255	
Ser	Asp	Arg	Asp	Ile	Val	Phe	Glu	Asn	Leu	Val	Lys	Gly	Leu	Ser	Phe
			260					265					270		
Ile	Ser	Cys	Glu	Ser	Leu	Glu	Asp	Gly	Ser	Ala	Ala	Gly	Val	Asn	Ile
		275					280					285			
Val	Val	Thr	His	Cys	Gly	Asp	Val	Thr	Leu	Thr	Asp	Cys	Ala	Thr	Gly
	290					295					300				
Leu	Asp	Leu	Glu	Ala	Leu	Arg	Leu	Val	Lys	Asp	Phe	Ser	Arg	Gly	Gly
305					310					315					320
Ala	Val	Phe	Thr	Ala	Arg	Asn	His	Glu	Val	Gln	Asn	Asn	Leu	Ala	Gly
				325					330					335	
Gly	Ile	Leu	Ser	Val	Val	Gly	Asn	Lys	Gly	Ala	Ile	Val	Val	Glu	Lys
			340					345					350		
Asn	Ser	Ala	Glu	Lys	Ser	Asn	Gly	Gly	Ala	Phe	Ala	Cys	Gly	Ser	Phe
		355					360					365			
Val	Tyr	Ser	Asn	Asn	Glu	Asn	Thr	Ala	Leu	Trp	Lys	Glu	Asn	Gln	Ala
	370					375					380				
Leu	Ser	Gly	Gly	Ala	Ile	Ser	Ser	Ala	Ser	Asp	Ile	Asp	Ile	Gln	Gly
385					390					395					400
Asn	Cys	Ser	Ala	Ile	Glu	Phe	Ser	Gly	Asn	Gln	Ser	Leu	Ile	Ala	Leu
			405						410					415	
Gly	Glu	His	Ile	Gly	Leu	Thr	Asp	Phe	Val	Gly	Gly	Gly	Ala	Leu	Ala
			420					425					430		
Ala	Gln	Gly	Thr	Leu	Thr	Leu	Arg	Asn	Asn	Ala	Val	Val	Gln	Cys	Val
		435					440					445			
Lys	Asn	Thr	Ser	Lys	Thr	His	Gly	Gly	Ala	Ile	Leu	Ala	Gly	Thr	Val
	450					455					460				
Asp	Leu	Asn	Glu	Thr	Ile	Ser	Glu	Val	Ala	Phe	Lys	Gln	Asn	Thr	Ala
465					470					475					480
Ala	Leu	Thr	Gly	Gly	Ala	Leu	Ser	Ala	Asn	Asp	Lys	Val	Ile	Ile	Ala
				485					490					495	
Asn	Asn	Phe	Gly	Glu	Ile	Leu	Phe	Glu	Gln	Asn	Glu	Val	Arg	Asn	His

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			500					505					510		
Gly	Gly	Ala	Ile	Tyr	Cys	Gly	Cys	Arg	Ser	Asn	Pro	Lys	Leu	Glu	Gln
		515					520					525			
Lys	Asp	Ser	Gly	Glu	Asn	Ile	Asn	Ile	Ile	Gly	Asn	Ser	Gly	Ala	Ile
	530					535					540				
Thr	Phe	Leu	Lys	Asn	Lys	Ala	Ser	Val	Leu	Glu	Val	Met	Thr	Gln	Ala
545					550					555					560
Glu	Asp	Tyr	Ala	Gly	Gly	Gly	Ala	Leu	Trp	Gly	His	Asn	Val	Leu	Leu
				565					570					575	
Asp	Ser	Asn	Ser	Gly	Asn	Ile	Gln	Phe	Ile	Gly	Asn	Ile	Gly	Gly	Ser
			580					585					590		
Thr	Phe	Trp	Ile	Gly	Glu	Tyr	Val	Gly	Gly	Gly	Ala	Ile	Leu	Ser	Thr
	595					600						605			
Asp	Arg	Val	Thr	Ile	Ser	Asn	Asn	Ser	Gly	Asp	Val	Val	Phe	Lys	Gly
	610					615					620				
Asn	Lys	Gly	Gln	Cys	Leu	Ala	Gln	Lys	Tyr	Val	Ala	Pro	Gln	Glu	Thr
625					630					635					640
Ala	Pro	Val	Glu	Ser	Asp	Ala	Ser	Ser	Thr	Asn	Lys	Asp	Glu	Lys	Ser
				645					650					655	
Leu	Asn	Ala	Cys	Ser	His	Gly	Asp	His	Tyr	Pro	Pro	Lys	Thr	Val	Glu
			660					665					670		
Glu	Glu	Val	Pro	Pro	Ser	Leu	Leu	Glu	Glu	His	Pro	Val	Val	Ser	Ser
		675					680					685			
Thr	Asp	Ile	Arg	Gly	Gly	Gly	Ala	Ile	Leu	Ala	Gln	His	Ile	Phe	Ile
	690					695					700				
Thr	Asp	Asn	Thr	Gly	Asn	Leu	Arg	Phe	Ser	Gly	Asn	Leu	Gly	Gly	Gly
705					710					715					720
Glu	Glu	Ser	Ser	Thr	Val	Gly	Asp	Leu	Ala	Ile	Val	Gly	Gly	Gly	Ala
				725					730					735	
Leu	Leu	Ser	Thr	Asn	Glu	Val	Asn	Val	Cys	Ser	Asn	Gln	Asn	Val	Val
			740					745					750		
Phe	Ser	Asp	Asn	Val	Thr	Ser	Asn	Gly	Cys	Asp	Ser	Gly	Gly	Ala	Ile
		755					760					765			
Leu	Ala	Lys	Lys	Val	Asp	Ile	Ser	Ala	Asn	His	Ser	Val	Glu	Phe	Val
	770					775					780				
Ser	Asn	Gly	Ser	Gly	Lys	Phe	Gly	Gly	Ala	Val	Cys	Ala	Leu	Asn	Glu
785					790					795					800
Ser	Val	Asn	Ile	Thr	Asp	Asn	Gly	Ser	Ala	Val	Ser	Phe	Ser	Lys	Asn
				805					810					815	
Arg	Thr	Arg	Leu	Gly	Gly	Ala	Gly	Val	Ala	Ala	Pro	Gln	Gly	Ser	Val
			820					825					830		
Thr	Ile	Cys	Gly	Asn	Gln	Gly	Asn	Ile	Ala	Phe	Lys	Glu	Asn	Phe	Val
		835					840					845			
Phe	Gly	Ser	Glu	Asn	Gln	Arg	Ser	Gly	Gly	Gly	Ala	Ile	Ile	Ala	Asn
	850					855					860				
Ser	Ser	Val	Asn	Ile	Gln	Asp	Asn	Ala	Gly	Asp	Ile	Leu	Phe	Val	Ser
865					870					875					880
Asn	Ser	Thr	Gly	Ser	Tyr	Gly	Gly	Ala	Ile	Phe	Val	Gly	Ser	Leu	Val
				885					890					895	
Ala	Ser	Glu	Gly	Ser	Asn	Pro	Arg	Thr	Leu	Thr	Ile	Thr	Gly	Asn	Ser
			900					905					910		
Gly	Asp	Ile	Leu	Phe	Ala	Lys	Asn	Ser	Thr	Gln	Thr	Ala	Ala	Ser	Leu
		915					920					925			
Ser	Glu	Lys	Asp	Ser	Phe	Gly	Gly	Gly	Ala	Ile	Tyr	Thr	Gln	Asn	Leu
					935						940				
Lys	Ile	Val	Lys	Asn	Ala	Gly	Asn	Val	Ser	Phe	Tyr	Gly	Asn	Arg	Ala
945					950					955					960

Pro Ser Gly Ala Gly Val Gln Ile Ala Asp Gly Gly Thr Val Cys Leu
965 970 975
Glu Ala Phe Gly Gly Asp Ile Leu Phe Glu Gly Asn Ile Asn Phe Asp
980 985 990
Gly Ser Phe Asn Ala Ile His Leu Cys Gly Asn Asp Ser Lys Ile Val
995 1000 1005

Glu Leu Ser Ala Val Gln Asp Lys Asn Ile Ile Phe Gln Asp Ala Ile
1010 1015 1020
Thr Tyr Glu Glu Asn Thr Ile Arg Gly Leu Pro Asp Lys Asp Val Ser
1025 1030 1035 1040
Pro Leu Ser Ala Pro Ser Leu Ile Phe Asn Ser Lys Pro Gln Asp Asp
1045 1050 1055
Ser Ala Gln His His Glu Gly Thr Ile Arg Phe Ser Arg Gly Val Ser
1060 1065 1070
Lys Ile Pro Gln Ile Ala Ala Ile Gln Glu Gly Thr Leu Ala Leu Ser
1075 1080 1085
Gln Asn Ala Glu Leu Trp Leu Ala Gly Leu Lys Gln Glu Thr Gly Ser
1090 1095 1100
Ser Ile Val Leu Ser Ala Gly Ser Ile Leu Arg Ile Phe Asp Ser Gln
1105 1110 1115 1120
Val Asp Ser Ser Ala Pro Leu Pro Thr Glu Asn Lys Glu Glu Thr Leu
1125 1130 1135
Val Ser Ala Gly Val Gln Ile Asn Met Ser Ser Pro Thr Pro Asn Lys
1140 1145 1150
Asp Lys Ala Val Asp Thr Pro Val Leu Ala Asp Ile Ile Ser Ile Thr
1155 1160 1165
Val Asp Leu Ser Ser Phe Val Pro Glu Gln Asp Gly Thr Leu Pro Leu
1170 1175 1180
Pro Pro Glu Ile Ile Ile Pro Lys Gly Thr Lys Leu His Ser Asn Ala
1185 1190 1195 1200
Ile Asp Leu Lys Ile Ile Asp Pro Thr Asn Val Gly Tyr Glu Asn His
1205 1210 1215
Ala Leu Leu Ser Ser His Lys Asp Ile Pro Leu Ile Ser Leu Lys Thr
1220 1225 1230
Ala Glu Gly Met Thr Gly Thr Pro Thr Ala Asp Ala Ser Leu Ser Asn
1235 1240 1245
Ile Lys Ile Asp Val Ser Leu Pro Ser Ile Thr Pro Ala Thr Tyr Gly
1250 1255 1260
His Thr Gly Val Trp Ser Glu Ser Lys Met Glu Asp Gly Arg Leu Val
1265 1270 1275 1280
Val Gly Trp Gln Pro Thr Gly Tyr Lys Leu Asn Pro Glu Lys Gln Gly
1285 1290 1295
Ala Leu Val Leu Asn Asn Leu Trp Ser His Tyr Thr Asp Leu Arg Ala
1300 1305 1310
Leu Lys Gln Glu Ile Phe Ala His His Thr Ile Ala Gln Arg Met Glu
1315 1320 1325
Leu Asp Phe Ser Thr Asn Val Trp Gly Ser Gly Leu Gly Val Val Glu
1330 1335 1340
Asp Cys Gln Asn Ile Gly Glu Phe Asp Gly Phe Lys His His Leu Thr
1345 1350 1355 1360
Gly Tyr Ala Leu Gly Leu Asp Thr Gln Leu Val Glu Asp Phe Leu Ile
1365 1370 1375
Gly Gly Cys Phe Ser Gln Phe Phe Gly Lys Thr Glu Ser Gln Ser Tyr
1380 1385 1390
Lys Ala Lys Asn Asp Val Lys Ser Tyr Met Gly Ala Ala Tyr Ala Gly
1395 1400 1405
Ile Leu Ala Gly Pro Trp Leu Ile Lys Gly Ala Phe Val Tyr Gly Asn

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1410 1415 1420
 Ile Asn Asn Asp Leu Thr Thr Asp Tyr Gly Thr Leu Gly Ile Ser Thr
 1425 1430 1435 1440
 Gly Ser Trp Ile Gly Lys Gly Phe Ile Ala Gly Thr Ser Ile Asp Tyr
 1445 1450 1455
 Arg Tyr Ile Val Asn Pro Arg Arg Phe Ile Ser Ala Ile Val Ser Thr
 1460 1465 1470
 Val Val Pro Phe Val Glu Ala Glu Tyr Val Arg Ile Asp Leu Pro Glu
 1475 1480 1485
 Ile Ser Glu Gln Gly Lys Glu Val Arg Thr Phe Gln Lys Thr Arg Phe
 1490 1495 1500
 Glu Asn Val Ala Ile Pro Phe Gly Phe Ala Leu Glu His Ala Tyr Ser
 1505 1510 1515 1520
 Arg Gly Ser Arg Ala Glu Val Asn Ser Val Gln Leu Ala Tyr Val Phe
 1525 1530 1535
 Asp Val Tyr Arg Lys Gly Pro Val Ser Leu Ile Thr Leu Lys Asp Ala
 1540 1545 1550
 Ala Tyr Ser Trp Lys Ser Tyr Gly Val Asp Ile Pro Cys Lys Ala Trp
 1555 1560 1565
 Lys Ala Arg Leu Ser Asn Asn Thr Glu Trp Asn Ser Tyr Leu Ser Thr
 1570 1575 1580
 Tyr Leu Ala Phe Asn Tyr Glu Trp Arg Glu Asp Leu Ile Ala Tyr Asp
 1585 1590 1595 1600
 Phe Asn Gly Gly Ile Arg Ile Ile Phe
 1605

<210> 76
 <211> 196
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 76
 Met Thr Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln
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 Ala Val Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu
 20 25 30
 Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val
 35 40 45
 Cys Pro Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His
 50 55 60
 Thr Arg Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr
 65 70 75 80
 His Gln Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly
 85 90 95
 Ile Thr Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser
 100 105 110
 Tyr His Val Leu Lys Pro Glu Glu Leu Ser Phe Arg Gly Val Phe
 115 120 125
 Leu Ile Asp Lys Gly Gly Ile Arg His Leu Val Val Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu
 145 150 155 160
 Ile Phe Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Asn Trp His Glu
 165 170 175
 Gly Glu Arg Ala Met Ala Pro Asn Glu Gly Leu Gln Asn Tyr Phe
 180 185 190

Gly Thr Ile Asp
195

<210> 77
<211> 619
<212> PRT
<213> Chlamydia pneumoniae

<400> 77
Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe Gly Leu Leu Phe Thr
 5 10 15
Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr Lys Asp Asn Ala Tyr
 20 25 30
Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser Leu Lys Tyr Ala Pro
 35 40 45
Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp Leu Ser Gln Gln Thr
 50 55 60
Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu Lys Pro Thr Thr Asn
 65 70 75 80
Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg Ser Leu Asn Asp Tyr
 85 90 95
His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser Ala Tyr Ile Pro Tyr
 100 105 110
Val Leu Lys Leu Ser Glu Asp Gly His Val Phe Val Val Asp Val Gln
 115 120 125
Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu Ile Leu Glu Val Asp
 130 135 140
Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu Arg Phe Gly Arg Gly
 145 150 155 160
Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser Leu Thr Ser Arg Ser
 165 170 175
Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile Ala Met Leu Lys Leu
 180 185 190
Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro Val Arg Trp Arg Tyr
 195 200 205
Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val Ala Pro Leu Ile Pro
 210 215 220
Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys Val Leu Phe Arg Ser
 225 230 235 240
Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Leu Phe Ser Ser Tyr Met
 245 250 255
Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln Asn Lys Gln Arg Phe
 260 265 270
Asp Ser Asn His His Ile Gly Ser Arg Asn Gly Phe Leu Pro Thr Phe
 275 280 285
Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro Tyr Arg Ser Tyr Ile
 290 295 300
Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His Arg Ile Gly Phe Leu
 305 310 315 320
Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu Gly Leu Glu Glu Asp
 325 330 335
His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu Ile Ile Asp His Leu
 340 345 350
Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln Thr His Asn Pro Gly
 355 360 365
Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser Met Leu Thr Asp His

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370 375 380
 Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe Thr Gln Asp Glu Val
 385 390 395 400
 Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu Asp Val Phe Thr Asp
 405 410 415
 Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met Glu Gly Tyr Cys Met
 420 425 430
 Asp Met His Ala Val Ala Ser Leu Gln Asn Phe Ser Gln Ser Val Leu
 435 440 445
 Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser Lys Pro Met Pro Leu
 450 455 460
 Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys His Gln Tyr Thr Lys
 465 470 475 480
 Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe Ser Cys Gly Asp Leu
 485 490 495
 Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala Thr Leu Ile Gly Lys
 500 505 510
 Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln Val Thr Phe Pro Asn
 515 520 525
 Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly Ser Leu Ala Val Arg
 530 535 540
 Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val Ala Pro His Ile Asp
 545 550 555 560
 Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser Arg Phe Thr Asp Tyr
 565 570 575
 Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser Leu Ser Glu Asn Ala
 580 585 590
 Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu Thr Pro Glu Val Ile
 595 600 605
 Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Ser
 610 615

<210> 78
 <211> 651
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 78
 Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu Arg Thr
 5 10 15
 Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala Asn
 20 25 30
 Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
 35 40 45
 Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
 50 55 60
 Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
 65 70 75 80
 Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
 85 90 95
 Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
 100 105 110
 Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
 115 120 125
 Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
 130 135 140

Lys 145	Asp	Thr	Ala	Ala	Thr 150	Asp	Glu	Glu	Thr	Ala 155	Ile	Ala	Ala	Glu	Trp 160
Glu	Thr	Lys	Asn	Ala 165	Asp	Ala	Val	Lys	Val 170	Gly	Ala	Gln	Ile	Thr 175	Glu
Leu	Ala	Lys	Tyr 180	Ala	Ser	Asp	Asn	Gln 185	Ala	Ile	Leu	Asp	Ser 190	Leu	Gly
Lys	Leu	Thr 195	Ser	Phe	Asp	Leu	Leu 200	Gln	Ala	Ala	Leu	Leu 205	Gln	Ser	Val
Ala	Asn 210	Asn	Asn	Lys	Ala 215	Ala	Glu	Leu	Leu	Lys	Glu 220	Met	Gln	Asp	Asn
Pro 225	Val	Val	Pro	Gly	Lys 230	Thr	Pro	Ala	Ile	Ala 235	Gln	Ser	Leu	Val	Asp 240
Gln	Thr	Asp	Ala	Thr 245	Ala	Thr	Gln	Ile	Glu 250	Lys	Asp	Gly	Asn	Ala 255	Ile
Arg	Asp	Ala	Tyr 260	Phe	Ala	Gly	Gln	Asn 265	Ala	Ser	Gly	Ala	Val 270	Glu	Asn
Ala	Lys	Ser 275	Asn	Asn	Ser	Ile	Ser 280	Asn	Ile	Asp	Ser	Ala 285	Lys	Ala	Ala
Ile	Ala 290	Thr	Ala	Lys	Thr	Gln 295	Ile	Ala	Glu	Ala	Gln 300	Lys	Lys	Phe	Pro
Asp 305	Ser	Pro	Ile	Leu	Gln 310	Glu	Ala	Glu	Gln	Met 315	Val	Ile	Gln	Ala	Glu 320
Lys	Asp	Leu	Lys	Asn 325	Ile	Lys	Pro	Ala	Asp 330	Gly	Ser	Asp	Val	Pro 335	Asn
Pro	Gly	Thr	Thr 340	Val	Gly	Gly	Ser	Lys 345	Gln	Gln	Gly	Ser	Ser 350	Ile	Gly
Ser	Ile	Arg 355	Val	Ser	Met	Leu	Leu 360	Asp	Asp	Ala	Glu	Asn 365	Glu	Thr	Ala
Ser	Ile 370	Leu	Met	Ser	Gly	Phe 375	Arg	Gln	Met	Ile	His 380	Met	Phe	Asn	Thr
Glu 385	Asn	Pro	Asp	Ser	Gln 390	Ala	Ala	Gln	Gln	Glu 395	Leu	Ala	Ala	Gln	Ala 400
Arg	Ala	Ala	Lys	Ala 405	Ala	Gly	Asp	Asp	Ser 410	Ala	Ala	Ala	Ala	Leu 415	Ala
Asp	Ala	Gln	Lys 420	Ala	Leu	Glu	Ala 425	Ala	Leu	Gly	Lys	Ala	Gly 430	Gln	Gln
Gln	Gly	Ile 435	Leu	Asn	Ala	Leu	Gly 440	Gln	Ile	Ala	Ser	Ala 445	Ala	Val	Val
Ser	Ala 450	Gly	Val	Pro	Pro	Ala 455	Ala	Ala	Ser	Ser	Ile 460	Gly	Ser	Ser	Val
Lys 465	Gln	Leu	Tyr	Lys	Thr 470	Ser	Lys	Ser	Thr	Gly 475	Ser	Asp	Tyr	Lys	Thr 480
Gln	Ile	Ser	Ala	Gly 485	Tyr	Asp	Ala	Tyr	Lys 490	Ser	Ile	Asn	Asp	Ala 495	Tyr
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Gly	Pro 530	Glu	Lys	Thr	Asp	Gln 535	Ala	Leu	Ala	Arg	Val 540	Ile	Ser	Gly	Asn
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Val	Met	Gln	Ile	Ile 565	Gln	Ser	Asn	Pro	Gln 570	Ala	Asn	Asn	Glu	Glu 575	Ile
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 35 40 45
 Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys
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<210> 81

<211> 1038

<212> DNA

<213> Chlamydia trachomatis serovar D

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<211> 3159

<212> DNA

<213> Chlamydia trachomatis serovar D

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 <213> Chlamydia trachomatis serovar D

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<211> 1422
<212> DNA
<213> Chlamydia trachomatis serovar D
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 <212> DNA
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<210> 87
 <211> 258
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 91
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<210> 92
 <211> 1074
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<212> DNA

<213> Chlamydia trachomatis serovar D

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<211> 2601

<212> DNA

<213> Chlamydia trachomatis serovar D

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<211> 1016

<212> PRT

<213> Chlamydia trachomatis serovar D

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	450					455					460				
Pro	Ser	Ser	Ser	Ser	Met	Pro	Gly	Ala	Val	Thr	Ile	Asn	Gln	Ser	Gly
	465				470					475					480
Asn	Gly	Ser	Val	Ile	Phe	Thr	Ala	Glu	Ser	Leu	Thr	Pro	Ser	Glu	Lys
				485					490					495	
Leu	Gln	Val	Leu	Asn	Ser	Thr	Ser	Asn	Phe	Pro	Gly	Ala	Leu	Thr	Val
			500					505					510		
Ser	Gly	Gly	Glu	Leu	Val	Val	Thr	Glu	Gly	Ala	Thr	Leu	Thr	Thr	Gly
		515					520					525			
Thr	Ile	Thr	Ala	Thr	Ser	Gly	Arg	Val	Thr	Leu	Gly	Ser	Gly	Ala	Ser
	530					535					540				
Leu	Ser	Ala	Val	Ala	Gly	Ala	Ala	Asn	Asn	Asn	Tyr	Thr	Cys	Thr	Val
	545				550				555						56

645 650 655
 Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro Pro Asn Thr
 660 665 670
 Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn Tyr Gly Glu
 675 680 685
 Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro Asn Ser Leu
 690 695 700
 Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly Leu Lys Glu
 705 710 715 720
 His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu His Ala Leu
 725 730 735
 Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp Gly Phe Leu
 740 745 750
 Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His Tyr Glu Asn
 755 760 765
 Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly Gln Thr Lys
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 Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr Met Leu Ser
 785 790 795 800
 Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu Thr Val Met
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 Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met His Thr Gln
 820 825 830
 Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys Cys His Trp
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 His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His Asn Phe Leu
 850 855 860
 Glu Tyr Cys Ile Pro Thr Arg Gln Phe Ala Arg Asp Tyr Glu Leu Thr
 865 870 875 880
 Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser Ser Thr Arg
 885 890 895
 Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser Gly His Asn
 900 905 910
 Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser His Val Arg
 915 920 925
 Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr Arg Pro Asp
 930 935 940
 Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile Ala Asn Gly
 945 950 955 960
 Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His Ala Phe Phe
 965 970 975
 Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly Arg Ala Tyr
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 Ser Met Gly Leu Asn Arg Ile Phe
 1010 1015

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 <212> PRT
 <213> Chlamydia trachomatis serovar D

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10007633 100504

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 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
~~Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu~~
~~50 55 60~~
 Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
 145 150 155 160
 Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
 165 170 175
 Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Ile Trp Thr Pro Glu Leu Gln Gln Glu
 245 250 255
~~Ile Val Glu Leu Ile Lys Arg Ala Val Asp Leu Glu Ile Glu Tyr Ala~~
~~260 265~~
 Gln Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ala Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Gln His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Thr Lys Asn Pro Phe Pro Trp Met Ser Glu
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<213> Chlamydia trachomatis serovar D

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 Phe Gln Ala Leu Glu Ala Ala Phe Arg Asp Thr Arg Arg Ile Asp Asp
 35 40 45
 His Met Pro Leu Pro Glu Asp Leu Glu Ser Ser Ile Arg Ser Ile Thr

	50					55					60					
His 65	Gln	Val	Val	Lys	Glu 70	Val	Val	Gln	Lys	Ile 75	Thr	Asp	Gly	Gln	Val 80	
Val	Thr	Val	Glu	Arg 85	Ile	Gln	Asp	Met	Val 90	Glu	Ser	Gln	Leu	Tyr 95	Val	
Asn	Gly	Leu	Gln 100	Asp	Val	Ala	Arg	Asp 105	Tyr	Ile	Val	Tyr	Arg 110	Asp	Asp	
Arg	Lys	Ala 115	His	Arg	Lys	Lys	Ser 120	Trp	Gln	Ser	Leu	Ser 125	Val	Val	Arg	
Arg	Cys 130	Gly	Thr	Val	Val	His 135	Phe	Asn	Pro	Met	Lys 140	Ile	Ser	Ala	Ala	
Leu 145	Glu	Lys	Ala	Phe	Arg 150	Ala	Thr	Asp	Lys	Thr 155	Glu	Gly	Met	Thr	Pro 160	
Ser	Ser	Val	Arg	Glu 165	Glu	Ile	Asn	Ala	Leu 170	Thr	Gln	Asn	Ile	Val 175	Ala	
Glu	Ile	Glu	Glu 180	Cys	Cys	Pro	Gln	Gln 185	Asp	Arg	Arg	Ile	Asp 190	Ile	Glu	
Lys	Ile	Gln 195	Asp	Ile	Val	Glu	Gln 200	Gln	Leu	Met	Val	Val 205	Gly	His	Tyr	
Ala	Val 210	Ala	Lys	Asn	Tyr	Ile 215	Leu	Tyr	Arg	Glu	Ala 220	Arg	Ala	Arg	Val	
Arg 225	Asp	Asn	Arg	Glu	Glu 230	Asp	Gly	Ser	Thr	Glu 235	Lys	Thr	Ile	Ala	Glu 240	
Glu	Ala	Val	Glu	Val 245	Leu	Ser	Lys	Asp	Gly 250	Ser	Thr	Tyr	Thr	Met 255	Thr	
His	Ser	Gln 260	Leu	Leu	Ala	His	Leu	Ala 265	Arg	Ala	Cys	Ser	Arg 270	Phe	Pro	
Glu	Thr 275	Thr	Asp	Ala	Ala	Leu	Leu 280	Thr	Asp	Met	Ala	Phe 285	Ala	Asn	Phe	
Tyr 290	Ser	Gly	Ile	Lys	Glu	Ser 295	Glu	Val	Val	Leu	Ala 300	Cys	Ile	Met	Ala	
Ala 305	Arg	Ala	Asn	Ile	Glu 310	Lys	Glu	Pro	Asp	Tyr 315	Ala	Phe	Val	Ala	Ala 320	
Glu	Leu	Leu	Leu	Asp 325	Val	Val	Tyr	Lys	Glu 330	Ala	Leu	Gly	Lys	Ser 335	Lys	
Tyr	Ala	Glu	Asp 340	Leu	Glu	Gln	Ala	His 345	Arg	Asp	His	Phe	Lys 350	Arg	Tyr	
Ile	Ala	Glu 355	Gly	Asp	Thr	Tyr	Arg 360	Leu	Asn	Ala	Glu	Leu 365	Lys	His	Leu	
Phe	Asp 370	Leu	Asp	Ala	Leu	Ala 375	Asp	Ala	Met	Asp	Leu 380	Ser	Arg	Asp	Leu	
Gln 385	Phe	Ser	Tyr	Met	Gly 390	Ile	Gln	Asn	Leu	Tyr 395	Asp	Arg	Tyr	Phe	Asn 400	
His	His	Glu	Gly	Cys 405	Arg	Leu	Glu	Thr	Pro 410	Gln	Ile	Phe	Trp	Met 415	Arg	
Val	Ala	Met	Gly 420	Leu	Ala	Leu	Asn	Glu 425	Gln	Asp	Lys	Thr	Ser 430	Trp	Ala	
Ile	Thr	Phe 435	Tyr	Asn	Leu	Leu	Ser 440	Thr	Phe	Arg	Tyr	Thr 445	Pro	Ala	Thr	
Pro	Thr 450	Leu	Phe	Asn	Ser	Gly 455	Met	Arg	His	Ser	Gln 460	Leu	Ser	Ser	Cys	
Tyr 465	Leu	Ser	Thr	Val	Gln 470	Asp	Asn	Leu	Val	Asn 475	Ile	Tyr	Lys	Val	Ile 480	
Ala	Asp	Asn	Ala	Met 485	Leu	Ser	Lys	Trp	Ala 490	Gly	Gly	Ile	Gly	Asn 495	Asp	
Trp	Thr	Ala	Ile 500	Arg	Ala	Thr	Gly	Ala 505	Leu	Ile	Lys	Gly	Thr 510	Asn	Gly	

Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
		515					520					525			
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
		530				535					540				
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545					550					555					560
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
				565					570					575	
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
			580					585					590		
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
		595					600					605			
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
		610				615					620				
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
625					630					635					640
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
				645					650					655	
Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	Ala	Gln	Asp	His	Lys	Gly	Val	Val
			660					665					670		
Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Thr
		675					680					685			
Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Gln	His	Ile
		690				695					700				
Val	Gly	Asp	Gly	Leu	Asp	Glu	Glu	Lys	Leu	Ser	Glu	Thr	Ile	Ser	Ile
705					710					715					720
Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
				725					730				735		
Lys	Glu	Ala	Lys	Glu	Ala	Asn	Phe	Ala	His	Arg	Ala	Ile	Gly	Leu	Gly
			740					745					750		
Val	Met	Gly	Phe	Gln	Asp	Ala	Leu	Tyr	Lys	Leu	Asp	Ile	Ser	Tyr	Ala
		755					760					765			
Ser	Gln	Glu	Ala	Val	Glu	Phe	Ala	Asp	Tyr	Ser	Ser	Glu	Leu	Ile	Ser
		770				775					780				
Tyr	Tyr	Ala	Ile	Gln	Ala	Ser	Cys	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr
785					790					795					800
Tyr	Ser	Ser	Tyr	Lys	Gly	Ser	Lys	Trp	Asp	Arg	Gly	Leu	Leu	Pro	Ile
				805					810					815	
Asp	Thr	Ile	Gln	Leu	Leu	Ala	Asn	Tyr	Arg	Gly	Glu	Ala	Asn	Leu	Gln
			820					825					830		
Met	Asp	Thr	Ser	Ser	Arg	Lys	Asp	Trp	Glu	Pro	Ile	Arg	Ser	Leu	Val
		835					840					845			
Lys	Glu	His	Gly	Met	Arg	His	Cys	Gln	Leu	Met	Ala	Ile	Ala	Pro	Thr
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Ala	Thr														

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<213> Chlamydia trachomatis serovar D

<400> 98

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Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val
		35					40					45			
Gly	Pro	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val
	50					55					60				
Gly	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly
	65				70					75					80
Asp	Pro	Ser	Ser	Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys
				85					90					95	
Val	Glu	Gln	Ser	Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln
			100					105					110		
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser
		115					120					125			
Phe	Thr	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu
	130					135					140				
Gly	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr
	145				150					155					160
Asp	Val	Lys	Ala	Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp
				165					170					175	
Leu	Ile	Phe	Glu	Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser
			180					185					190		
Ser	Leu	Glu	Gln	Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His
		195					200					205			
Asp	Cys	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala
	210					215					220				
Glu	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe
	225				230					235					240
Phe	Val	Thr	Gly	Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala
				245					250					255	
Gly	Asp	Met	Val	Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly
			260					265					270		
Asn	Ser	Ala	Asn	Phe	Ala	Asn	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys
		275					280					285			
Val	Leu	Phe	Val	Ala	Asn	Asp	Lys	Lys	Thr	Ser	Phe	Ile	Glu	Asn	Arg
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			20					25					30		
Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val
		35					40					45			
Gly	Pro	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val
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Gly	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly
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Asp	Pro	Ser	Ser	Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys
				85					90					95	
Val	Glu	Gln	Ser	Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln
			100					105					110		
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser
		115					120					125			
Phe	Thr	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu
		130				135					140				
Gly	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr
	145				150					155				160	
Asp	Val	Lys	Ala	Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp
				165					170					175	
Leu	Ile	Phe	Glu	Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser
			180					185					190		
Ser	Leu	Glu	Gln	Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His
		195					200					205			
Asp	Cys	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala
	210					215					220				
Glu	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe
	225				230					235					240
Phe	Val	Thr	Gly	Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala
				245					250					255	
Gly	Asp	Met	Val	Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly
			260					265					270		
Asn	Ser	Ala	Asn	Phe	Ala	Asn	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys
		275					280					285			
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Asn	Cys	Ala	Glu	Leu 325	Val	Phe	Lys	Gly	Asn 330	Cys	Ala	Ile	Gly	Thr 335	Glu
Asp	Lys	Gly	Ser 340	Leu	Gly	Gly	Gly	Ala 345	Ile	Ser	Ser	Leu	Gly	Thr	Val
Leu	Leu	Gln 355	Gly	Asn	His	Gly	Ile	Thr 360	Cys	Asp	Lys	Asn 365	Glu	Ser	Ala
Ser	Gln 370	Gly	Gly	Ala	Ile	Phe 375	Gly	Lys	Asn	Cys	Gln 380	Ile	Ser	Asp	Asn
Glu 385	Gly	Pro	Val	Val	Phe 390	Arg	Asp	Ser	Thr	Ala 395	Cys	Leu	Gly	Gly	Gly 400
Ala	Ile	Ala	Ala	Gln 405	Glu	Ile	Val	Ser	Ile 410	Gln	Asn	Asn	Gln	Ala 415	Gly
Ile	Ser	Phe	Glu 420	Gly	Gly	Lys	Ala	Ser 425	Phe	Gly	Gly	Gly	Ile 430	Ala	Cys
Gly	Ser	Phe 435	Ser	Ser	Ala	Gly	Gly 440	Ala	Ser	Val	Leu	Gly 445	Thr	Ile	Asp
Ile	Ser 450	Lys	Asn	Leu	Gly	Ala 455	Ile	Ser	Phe	Ser	Arg 460	Thr	Leu	Cys	Thr
Thr 465	Ser	Asp	Leu	Gly	Gln 470	Met	Glu	Tyr	Gln	Gly 475	Gly	Gly	Ala	Leu	Phe 480
Gly	Glu	Asn	Ile	Ser 485	Leu	Ser	Glu	Asn	Ala 490	Gly	Val	Leu	Thr	Phe 495	Lys
Asp	Asn	Ile	Val 500	Lys	Thr	Phe	Ala	Ser 505	Asn	Gly	Lys	Ile	Leu 510	Gly	Gly
Gly	Ala	Ile 515	Leu	Ala	Thr	Gly	Lys 520	Val	Glu	Ile	Thr	Asn 525	Asn	Ser	Glu
Gly	Ile 530	Ser	Phe	Thr	Gly	Asn 535	Ala	Arg	Ala	Pro	Gln 540	Ala	Leu	Pro	Thr
Gln 545	Glu	Glu	Phe	Pro	Leu 550	Phe	Ser	Lys	Lys	Glu 555	Gly	Arg	Pro	Leu	Ser 560
Ser	Gly	Tyr	Ser	Gly 565	Gly	Gly	Ala	Ile	Leu 570	Gly	Arg	Glu	Val	Ala 575	Ile
Leu	His	Asn	Ala 580	Ala	Val	Val	Phe	Glu 585	Gln	Asn	Arg	Leu	Gln 590	Cys	Ser
Glu	Glu	Glu 595	Ala	Thr	Leu	Leu	Gly 600	Cys	Cys	Gly	Gly	Gly	Ala 605	Val	His
Gly	Met 610	Asp	Ser	Thr	Ser	Ile 615	Val	Gly	Asn	Ser	Ser 620	Val	Arg	Phe	Gly
Asn 625	Asn	Tyr	Ala	Met	Gly 630	Gln	Gly	Val	Ser	Gly 635	Gly	Ala	Leu	Leu	Ser 640
Lys	Thr	Val	Gln 645	Leu	Ala	Gly	Asn	Gly	Ser 650	Val	Asp	Phe	Ser	Arg 655	Asn
Ile	Ala	Ser	Leu 660	Gly	Gly	Gly	Ala	Leu 665	Gln	Ala	Ser	Glu	Gly 670	Asn	Cys
Glu	Leu	Val 675	Asp	Asn	Gly	Tyr	Val 680	Leu	Phe	Arg	Asp	Asn 685	Arg	Gly	Arg
Val	Tyr 690	Gly	Gly	Ala	Ile	Ser 695	Cys	Leu	Arg	Gly	Asp 700	Val	Val	Ile	Ser
Gly 705	Asn	Lys	Gly	Arg	Val 710	Glu	Phe	Lys	Asp	Asn 715	Ile	Ala	Thr	Arg	Leu 720
Tyr	Val	Glu	Glu	Thr 725	Val	Glu	Lys	Val	Glu 730	Glu	Val	Glu	Pro	Ala 735	Pro
Glu	Gln	Lys	Asp 740	Asn	Asn	Glu	Leu	Ser 745	Phe	Leu	Gly	Arg	Ala 750	Glu	Gln
Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly

755 760 765
 Asp Leu Ser Pro Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg
 770 775 780
 Arg Glu Cys Ala Gly Gly Ala Ile Phe Ala Lys Arg Val Arg Ile Val
 785 790 795 800
 Asp Asn Gln Glu Ala Val Val Phe Ser Asn Phe Ser Asp Ile Tyr
 805 810 815
 Gly Gly Ala Ile Phe Thr Gly Ser Leu Arg Glu Glu Asp Lys Leu Asp
 820 825 830
 Gly Gln Ile Pro Glu Val Leu Ile Ser Gly Asn Ala Gly Asp Val Val
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 Phe Ser Gly Asn Ser Ser Lys Arg Asp Glu His Leu Pro His Thr Gly
 850 855 860
 Gly Gly Ala Ile Cys Thr Gln Asn Leu Thr Ile Ser Gln Asn Thr Gly
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 Asn Val Leu Phe Tyr Asn Asn Val Ala Cys Ser Gly Gly Ala Val Arg
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 Ile Glu Asp His Gly Asn Val Leu Leu Glu Ala Phe Gly Gly Asp Ile
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 Val Phe Lys Gly Asn Ser Ser Phe Arg Ala Gln Gly Ser Asp Ala Ile
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 Tyr Phe Ala Gly Lys Glu Ser His Ile Thr Ala Leu Asn Ala Thr Glu
 930 935 940
 Gly His Ala Ile Val Phe His Asp Ala Leu Val Phe Glu Asn Leu Glu
 945 950 955 960
 Glu Arg Lys Ser Ala Glu Val Leu Leu Ile Asn Ser Arg Glu Asn Pro
 965 970 975
 Gly Tyr Thr Gly Ser Ile Arg Phe Leu Glu Ala Glu Ser Lys Val Pro
 980 985 990
 Gln Cys Ile His Val Gln Gln Gly Ser Leu Glu Leu Leu Asn Gly Ala
 995 1000 1005
 Thr Leu Cys Ser Tyr Gly Phe Lys Gln Asp Ala Gly Ala Lys Leu Val
 1010 1015 1020
 Leu Ala Ala Gly Ala Lys Leu Lys Ile Leu Asp Ser Gly Thr Pro Val
 1025 1030 1035 1040
 Gln Gln Gly His Ala Ile Ser Lys Pro Glu Ala Glu Ile Glu Ser Ser
 1045 1050 1055
 Ser Glu Pro Glu Gly Ala His Ser Leu Trp Ile Ala Lys Asn Ala Gln
 1060 1065 1070
 Thr Thr Val Pro Met Val Asp Ile His Thr Ile Ser Val Asp Leu Ala
 1075 1080 1085
 Ser Phe Ser Ser Ser Gln Gln Glu Gly Thr Val Glu Ala Pro Gln Val
 1090 1095 1100
 Ile Val Pro Gly Gly Ser Tyr Val Arg Ser Gly Glu Leu Asn Leu Glu
 1105 1110 1115 1120
 Leu Val Asn Thr Thr Gly Thr Gly Tyr Glu Asn His Ala Leu Leu Lys
 1125 1130 1135
 Asn Glu Ala Lys Val Pro Leu Met Ser Phe Val Ala Ser Gly Asp Glu
 1140 1145 1150
 Ala Ser Ala Glu Ile Ser Asn Leu Ser Val Ser Asp Leu Gln Ile His
 1155 1160 1165
 Val Val Thr Pro Glu Ile Glu Glu Asp Thr Tyr Gly His Met Gly Asp
 1170 1175 1180
 Trp Ser Glu Ala Lys Ile Gln Asp Gly Thr Leu Val Ile Ser Trp Asn
 1185 1190 1195 1200
 Pro Thr Gly Tyr Arg Leu Asp Pro Gln Lys Ala Gly Ala Leu Val Phe
 1205 1210 1215

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Asn Ala Leu Trp Glu Glu Gly Ala Val Leu Ser Ala Leu Lys Asn Ala
 1220 1225 1230
 Arg Phe Ala His Asn Leu Thr Ala Gln Arg Met Glu Phe Asp Tyr Ser
 1235 1240 1245
 Thr Asn Val Trp Gly Phe Ala Phe Gly Gly Phe Arg Thr Leu Ser Ala
 1250 1255 1260
 Glu Asn Leu Val Ala Ile Asp Gly Tyr Lys Gly Ala Tyr Gly Gly Ala
 1265 1270 1275 1280
 Ser Ala Gly Val Asp Ile Gln Leu Met Glu Asp Phe Val Leu Gly Val
 1285 1290 1295
 Ser Gly Ala Ala Phe Leu Gly Lys Met Asp Ser Gln Lys Phe Asp Ala
 1300 1305 1310
 Glu Val Ser Arg Lys Gly Val Val Gly Ser Val Tyr Thr Gly Phe Leu
 1315 1320 1325
 Ala Gly Ser Trp Phe Phe Lys Gly Gln Tyr Ser Leu Gly Glu Thr Gln
 1330 1335 1340
 Asn Asp Met Lys Thr Arg Tyr Gly Val Leu Gly Glu Ser Ser Ala Ser
 1345 1350 1355 1360
 Trp Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser
 1365 1370 1375
 Leu Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro
 1380 1385 1390
 Tyr Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu
 1395 1400 1405
 Gln Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile
 1410 1415 1420
 Thr Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln
 1425 1430 1435 1440
 Phe Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr
 1445 1450 1455
 Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp
 1460 1465 1470
 Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala
 1475 1480 1485
 Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly
 1490 1495 1500
 Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr Asp Ser Lys Leu Gly
 1505 1510 1515 1520
 Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
 1525 1530

<210> 99
 <211> 474
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 99
 Met Lys Ile Ile His Thr Ala Ile Glu Phe Ala Pro Val Ile Lys Ala
 5 10 15
 Gly Gly Leu Gly Asp Ala Leu Tyr Gly Leu Ala Lys Ala Leu Ala Ala
 20 25 30
 Asn His Thr Thr Glu Val Val Ile Pro Leu Tyr Pro Lys Leu Phe Thr
 35 40 45
 Leu Pro Lys Glu Gln Asp Leu Cys Ser Ile Gln Lys Leu Ser Tyr Phe
 50 55 60
 Phe Ala Gly Glu Gln Glu Ala Thr Ala Phe Ser Tyr Phe Tyr Glu Gly

65					70					75				80
Ile	Lys	Val	Thr	Leu	Phe	Lys	Leu	Asp	Thr	Gln	Pro	Glu	Leu	Phe
				85					90					95
Asn	Ala	Glu	Thr	Ile	Tyr	Thr	Ser	Asp	Asp	Ala	Phe	Arg	Phe	Cys
			100					105					110	
Phe	Ser	Ala	Ala	Ala	Ala	Ser	Tyr	Ile	Gln	Lys	Glu	Gly	Ala	Asn
		115					120					125		Ile
Val	His	Leu	His	Asp	Trp	His	Thr	Gly	Leu	Val	Ala	Gly	Leu	Lys
	130					135					140			
Gln	Gln	Pro	Cys	Ser	Gln	Leu	Gln	Lys	Ile	Val	Leu	Thr	Leu	His
145					150					155				160
Phe	Gly	Tyr	Arg	Gly	Tyr	Thr	Thr	Arg	Glu	Ile	Leu	Glu	Ala	Ser
				165					170					175
Leu	Asn	Glu	Phe	Tyr	Ile	Ser	Gln	Tyr	Gln	Leu	Phe	Arg	Asp	Pro
			180					185					190	Gln
Thr	Cys	Val	Leu	Leu	Lys	Gly	Ala	Leu	Tyr	Cys	Ser	Asp	Phe	Val
		195					200					205		Thr
Thr	Val	Ser	Pro	Thr	Tyr	Ala	Lys	Glu	Ile	Leu	Glu	Asp	Tyr	Ser
	210					215					220			Asp
Tyr	Glu	Ile	His	Asp	Ala	Ile	Thr	Ala	Arg	Gln	His	His	Leu	Arg
225					230					235				240
Ile	Leu	Asn	Gly	Ile	Asp	Thr	Thr	Ile	Trp	Gly	Pro	Glu	Thr	Asp
				245					250					255
Asn	Leu	Ala	Lys	Asn	Tyr	Thr	Lys	Glu	Leu	Phe	Glu	Thr	Pro	Ser
			260					265					270	Ile
Phe	Phe	Glu	Ala	Lys	Ala	Glu	Asn	Lys	Lys	Ala	Leu	Tyr	Glu	Arg
		275					280					285		Leu
Gly	Leu	Ser	Leu	Glu	His	Ser	Pro	Cys	Val	Cys	Ile	Ile	Ser	Arg
	290					295					300			Ile
Ala	Glu	Gln	Lys	Gly	Pro	His	Phe	Met	Lys	Gln	Ala	Ile	Leu	His
305					310					315				Ala
Leu	Glu	Asn	Ala	Tyr	Thr	Leu	Ile	Ile	Gly	Thr	Cys	Tyr	Gly	Asn
				325					330				335	
Gln	Leu	His	Glu	Glu	Phe	Ala	Asn	Leu	Gln	Glu	Ser	Leu	Ala	Asn
			340				345						350	Ser
Pro	Asp	Val	Arg	Ile	Leu	Leu	Thr	Tyr	Ser	Asp	Val	Leu	Ala	Arg
		355					360					365		Gln
Ile	Phe	Ala	Ala	Ala	Asp	Met	Ile	Cys	Ile	Pro	Ser	Met	Phe	Glu
	370					375					380			Pro
Cys	Gly	Leu	Thr	Gln	Met	Ile	Gly	Met	Arg	Tyr	Gly	Thr	Val	Pro
385					390					395				400
Val	Arg	Ala	Thr	Gly	Gly	Leu	Ala	Asp	Thr	Val	Ala	Asn	Gly	Ile
			405						410					415
Gly	Phe	Ser	Phe	Phe	Asn	Pro	His	Asp	Phe	Tyr	Glu	Phe	Arg	Asn
			420					425					430	Met
Leu	Ser	Glu	Ala	Val	Thr	Thr	Tyr	Arg	Thr	Asn	His	Asp	Lys	Trp
		435					440					445		Gln
His	Ile	Val	Arg	Ala	Cys	Leu	Asp	Phe	Ser	Ser	Asp	Leu	Glu	Thr
	450					455					460			Ala
Ala	Asn	Lys	Tyr	Leu	Glu	Ile	Tyr	Lys	Gln					
465						470								

<210> 100

<211> 393

<212> PRT

<213> Chlamydia trachomatis serovar D

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Met	Lys	Lys	Leu	Leu	Lys	Ser	Val	Leu	Val	Phe	Ala	Ala	Leu	Ser	Ser
Ala	Ser	Ser	Leu	Gln	Ala	Leu	Pro	Val	Gly	Asn	Pro	Ala	Glu	Pro	Ser
Leu	Met	Ile	Asp	Gly	Ile	Leu	Trp	Glu	Gly	Phe	Gly	Gly	Asp	Pro	Cys
Asp	Pro	Cys	Ala	Thr	Trp	Cys	Asp	Ala	Ile	Ser	Met	Arg	Val	Gly	Tyr
Tyr	Gly	Asp	Phe	Val	Phe	Asp	Arg	Val	Leu	Lys	Thr	Asp	Val	Asn	Lys
Glu	Phe	Gln	Met	Gly	Ala	Lys	Pro	Thr	Thr	Asp	Thr	Gly	Asn	Ser	Ala
Ala	Pro	Ser	Thr	Leu	Thr	Ala	Arg	Glu	Asn	Pro	Ala	Tyr	Gly	Arg	His
Met	Gln	Asp	Ala	Glu	Met	Phe	Thr	Asn	Ala	Ala	Cys	Met	Ala	Leu	Asn
Ile	Trp	Asp	Arg	Phe	Asp	Val	Phe	Cys	Thr	Leu	Gly	Ala	Thr	Ser	Gly
Tyr	Leu	Lys	Gly	Asn	Ser	Ala	Ser	Phe	Asn	Leu	Val	Gly	Leu	Phe	Gly
Asp	Asn	Glu	Asn	Gln	Lys	Thr	Val	Lys	Ala	Glu	Ser	Val	Pro	Asn	Met
Ser	Phe	Asp	Gln	Ser	Val	Val	Glu	Leu	Tyr	Thr	Asp	Thr	Thr	Phe	Ala
Trp	Ser	Val	Gly	Ala	Arg	Ala	Ala	Leu	Trp	Glu	Cys	Gly	Cys	Ala	Thr
Leu	Gly	Ala	Ser	Phe	Gln	Tyr	Ala	Gln	Ser	Lys	Pro	Lys	Val	Glu	Glu
Leu	Asn	Val	Leu	Cys	Asn	Ala	Ala	Glu	Phe	Thr	Ile	Asn	Lys	Pro	Lys
Gly	Tyr	Val	Gly	Lys	Glu	Phe	Pro	Leu	Asp	Leu	Thr	Ala	Gly	Thr	Asp
Ala	Ala	Thr	Gly	Thr	Lys	Asp	Ala	Ser	Ile	Asp	Tyr	His	Glu	Trp	Gln
Ala	Ser	Leu	Ala	Leu	Ser	Tyr	Arg	Leu	Asn	Met	Phe	Thr	Pro	Tyr	Ile
Gly	Val	Lys	Trp	Ser	Arg	Ala	Ser	Phe	Asp	Ala	Asp	Thr	Ile	Arg	Ile
Ala	Gln	Pro	Lys	Ser	Ala	Thr	Ala	Ile	Phe	Asp	Thr	Thr	Thr	Leu	Asn
Pro	Thr	Ile	Ala	Gly	Ala	Gly	Asp	Val	Lys	Thr	Gly	Ala	Glu	Gly	Gln
Leu	Gly	Asp	Thr	Met	Gln	Ile	Val	Ser	Leu	Gln	Leu	Asn	Lys	Met	Lys
Ser	Arg	Lys	Ser	Cys	Gly	Ile	Ala	Val	Gly	Thr	Thr	Ile	Val	Asp	Ala
Asp	Lys	Tyr	Ala	Val	Thr	Val	Glu	Thr	Arg	Leu	Ile	Asp	Glu	Arg	Ala
Ala	His	Val	Asn	Ala	Gln	Phe	Arg	Phe							

<211> 195

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 101

Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys Ala
 5 10 15
 Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg Gly
 20 25 30
 Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys
 35 40 45
 Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu Glu
 50 55 60
 Arg Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr His
 65 70 75 80
 Ser Arg Trp Leu Ala Val Ala Arg Asn Ala Gly Gly Ile Glu Gly Thr
 85 90 95
 Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe
 100 105 110
 Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu
 115 120 125
 Ile Asp Lys Tyr Gly Val Val Arg His Ala Val Ile Asn Asp Leu Pro
 130 135 140
 Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu Ile
 145 150 155 160
 Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser Gly
 165 170 175
 Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe Gln
 180 185 190
 Thr Met Asp
 195

<210> 102

<211> 86

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 102

Met Ser Gln Asn Lys Asn Ser Ala Phe Met Gln Pro Val Asn Val Ser
 5 10 15
 Ala Asp Leu Ala Ala Ile Val Gly Ala Gly Pro Met Pro Arg Thr Glu
 20 25 30
 Ile Ile Lys Lys Met Trp Asp Tyr Ile Lys Lys Asn Gly Leu Gln Asp
 35 40 45
 Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val
 50 55 60
 Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys Met Val
 65 70 75 80
 Ser Gln His Ile Ile Lys
 85

<210> 103

<211> 394

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 103

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Ala Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Arg Asp Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Leu Pro Asn Ser Val Lys Pro His Thr Gln
 290 295 300
 Phe Lys Cys Ala Val Tyr Val Leu Gln Lys Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Thr Gly Tyr Arg Pro Gln Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Ile Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Phe Glu Val Gln Leu Ile Ser Pro Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Ile Ala
 385 390

<210> 104

<211> 82

<212> PRT

<213> Chlamydia trachomatis serovar D

[illegible]

<213> Chlamydia trachomatis serovar D

Met	Val	Ile	Pro	Lys 5	Val	Asp	Leu	Gly	Glu 10	Ser	Ala	Val	Met	Met 15	Gly
Tyr	Lys	Leu	Thr	Ser	Gln	Leu	Ala	Met	Leu	Ser	Ile	Leu	Leu	Thr	Phe
Thr	His	Thr	Met	Gly	His	Ala	Ser	Gln	Met	Ser	Gln	Thr	Leu	Pro	Thr
Ile	Ile	Glu	Ala	Gln	Ala	Glu	Glu	Ala	Leu	Gln	Ala	Asp	Arg	Gly	Val
Ala	Gly	Gln	Ala	Leu	Lys	Lys	Leu	Arg	Lys	Lys	Arg	Cys	Ala	Ser	Arg
Lys	Ser	Ala	Cys	Lys	Ala	Ser	Phe	Lys	Lys	Lys	Asp	Phe	Phe	Ser	Cys
Ile	Thr	Asn	Gly	Leu	Phe	Ser	Gly	Asn	His	Glu	Gln	Arg	Leu	Thr	Ala
Lys	Lys	Glu	Asn	Lys	Ala	Arg	Gly	Lys	Glu	Pro	Arg	Val	Val	Val	Gln
Thr	Thr	Lys	Lys	Arg	Gln	Ile	Thr	Gln	Ser	Glu	Lys	Glu	Phe	Phe	Asp
Trp	Leu	Cys	Asn	Ser	Lys	Arg	Glu	Arg	Lys	Leu	Leu	Lys	Lys	Lys	Pro
Val	Asn	Thr	Ser	Leu	Ala	Lys	Ser	Glu	Glu	Leu	Ser	Pro	Lys	Glu	Ala
Ala	Ile	Ala	Ala	Ala	Arg	Ala	Ser	Leu	Ser	Pro	Glu	Glu	Lys	Arg	Gln
Leu	Ile	Arg	Glu	Trp	Leu	Ala	Glu	Glu	Lys	Thr	Ala	Arg	Lys	Ser	Gly
Arg	Ala	Ala	Cys	Ala	Val	Ser	Glu	Asn	Leu	Lys	Arg	Asp	Gly	Ser	Ile
Thr	Ser	Thr	Leu	Arg	Tyr	Asp	Ala	Glu	Lys	Ala	Leu	Thr	Thr	Arg	Val
Lys	Arg	Asn	Glu	Asn	Ser	Val	Asn	Ala	Arg	Ala	Arg	Gln	Arg	Ala	Ala
Leu	Gln	Lys	Ala	Lys	Lys	Ala	Lys	Thr	Glu	Lys	Pro	Glu	Ala	Asp	Glu
Lys	Ala	Ala	Glu	Ala	Val	Ala	Ala	Pro	Thr	Lys	Gln	Ala	Ala	His	Lys

<210> 106
<211> 563
<212> PRT
<213> Chlamydia trachomatis serovar D

<400> 106

Met	Val	Tyr	Phe	Arg 5	Ala	His	Gln	Pro	Arg 10	His	Thr	Pro	Lys	Thr 15	Phe
Pro	Leu	Glu	Val 20	His	His	Ser	Phe	Ser 25	Asp	Lys	His	Pro	Gln 30	Ile	Ala
Lys	Ala	Met	Arg 35	Ile	Thr	Gly	Ile 40	Ala	Leu	Ala	Ala	Leu 45	Ser	Leu	Leu
Ala	Val 50	Val	Ala	Cys	Val	Ile 55	Ala	Val	Ser	Ala	Gly 60	Gly	Ala	Ala	Ile
Pro 65	Leu	Ala	Val	Ile	Ser 70	Gly	Ile	Ala	Val	Met 75	Ser	Gly	Leu	Leu	Ser 80
Ala	Ala	Thr	Ile	Ile 85	Cys	Ser	Ala	Lys	Lys 90	Ala	Leu	Ala	Gln	Arg 95	Lys
Gln	Lys	Gln	Leu 100	Glu	Glu	Ser	Leu	Pro 105	Leu	Asp	Asn	Ala 110	Thr	Glu	His
Val	Ser	Tyr 115	Leu	Thr	Ser	Asp	Thr 120	Ser	Tyr	Phe	Asn	Gln 125	Trp	Glu	Ser
Leu	Gly 130	Ala	Leu	Asn	Lys	Gln 135	Leu	Ser	Gln	Ile	Asp 140	Leu	Thr	Ile	Gln
Ala 145	Pro	Glu	Lys	Lys 150	Leu	Lys	Glu	Val	Leu 155	Gly	Ser	Arg	Tyr	Asp 160	
Ser	Ile	Asn	His	Ser 165	Ile	Glu	Glu	Ile	Ser 170	Asp	Arg	Phe	Thr	Lys 175	Met
Leu	Ser	Leu	Leu 180	Arg	Leu	Arg	Glu	His 185	Phe	Tyr	Arg	Gly	Glu 190	Glu	Arg
Tyr	Ala	Pro 195	Tyr	Leu	Ser	Pro	Pro 200	Leu	Leu	Asn	Lys	Asn 205	Arg	Leu	Leu
Thr	Gln 210	Ile	Thr	Ser	Asn	Met 215	Ile	Arg	Met	Leu	Pro 220	Lys	Ser	Gly	Gly
Val 225	Phe	Ser	Leu	Lys 230	Ala	Asn	Thr	Leu	Ser	His 235	Ala	Ser	Arg	Thr	Leu 240
Tyr	Thr	Val	Leu	Lys 245	Val	Ala	Leu	Ser	Leu 250	Gly	Val	Leu	Ala	Gly 255	Val
Ala	Ala	Leu	Ile 260	Ile	Phe	Leu	Pro	Pro 265	Ser	Leu	Pro	Phe	Ile 270	Ala	Val
Ile	Gly	Val 275	Ser	Ser	Leu	Ala	Leu 280	Gly	Met	Ala	Ser	Phe 285	Leu	Met	Ile
Arg	Gly	Ile	Lys	Tyr	Leu	Leu	Glu	His	Ser	Pro	Leu	Asn	Arg	Lys	Gln

Met	Val	Tyr	Phe	Arg 5	Ala	His	Gln	Pro	Arg 10	His	Thr	Pro	Lys	Thr 15	Phe
Pro	Leu	Glu	Val	His 20	His	Ser	Phe	Ser 25	Asp	Lys	His	Pro	Gln 30	Ile	Ala
Lys	Ala	Met 35	Arg	Ile	Thr	Gly	Ile 40	Ala	Leu	Ala	Ala	Leu 45	Ser	Leu	Leu
Ala	Val 50	Val	Ala	Cys	Val	Ile 55	Ala	Val	Ser	Ala	Gly 60	Gly	Ala	Ala	Ile
Pro 65	Leu	Ala	Val	Ile 70	Ser	Gly	Ile	Ala	Val	Met 75	Ser	Gly	Leu	Leu	Ser 80
Ala	Ala	Thr	Ile	Ile 85	Cys	Ser	Ala	Lys	Lys 90	Ala	Leu	Ala	Gln 95	Arg	Lys
Gln	Lys	Gln	Leu 100	Glu	Glu	Ser	Leu	Pro 105	Leu	Asp	Asn	Ala 110	Thr	Glu	His
Val	Ser	Tyr 115	Leu	Thr	Ser	Asp	Thr 120	Ser	Tyr	Phe	Asn	Gln 125	Trp	Glu	Ser
Leu	Gly 130	Ala	Leu	Asn 135	Lys	Gln	Leu	Ser	Gln	Ile	Asp 140	Leu	Thr	Ile	Gln
Ala 145	Pro	Glu	Lys	Lys 150	Leu	Leu	Lys	Glu	Val	Leu 155	Gly	Ser	Arg	Tyr	Asp 160
Ser	Ile	Asn	His	Ser 165	Ile	Glu	Glu	Ile	Ser 170	Asp	Arg	Phe	Thr	Lys 175	Met
Leu	Ser	Leu	Leu 180	Arg	Leu	Arg	Glu	His 185	Phe	Tyr	Arg	Gly 190	Glu	Glu	Arg
Tyr	Ala 195	Pro	Tyr	Leu	Ser	Pro	Pro 200	Leu	Leu	Asn	Lys	Asn 205	Arg	Leu	Leu
Thr	Gln 210	Ile	Thr	Ser	Asn	Met 215	Ile	Arg	Met	Leu	Pro 220	Lys	Ser	Gly	Gly
Val 225	Phe	Ser	Leu	Lys 230	Ala	Asn	Thr	Leu	Ser	His 235	Ala	Ser	Arg	Thr	Leu 240
Tyr	Thr	Val	Leu	Lys 245	Val	Ala	Leu	Ser	Leu 250	Gly	Val	Leu	Ala	Gly 255	Val
Ala	Ala	Leu	Ile 260	Ile	Phe	Leu	Pro	Pro 265	Ser	Leu	Pro	Phe 270	Ile	Ala	Val
Ile	Gly	Val 275	Ser	Ser	Leu	Ala	Leu 280	Gly	Met	Ala	Ser	Phe 285	Leu	Met	Ile
Arg	Gly	Ile	Lys	Tyr	Leu	Leu	Glu	His	Ser	Pro	Leu	Asn	Arg	Lys	Gln

290 295 300
 Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
 305 310 315 320
 Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
 325 330 335
 Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
 340 345 350
 His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
 355 360 365
 Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
 370 375 380
 Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
 385 390 395 400
 Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
 405 410 415
 Asp Ser Asn Ser Glu Phe Gln Glu Ile Ile Asn Lys Gly Leu Glu Ala
 420 425 430
 Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp
 435 440 445
 Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu
 450 455 460
 Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln
 465 470 475 480
 Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys
 485 490 495
 Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys
 500 505 510
 Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser
 515 520 525
 Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg
 530 535 540
 Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu
 545 550 555 560
 Asp Asn His

<210> 107

<211> 358

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 107

Met Arg Lys Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly
 20 25 30
 Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
 35 40 45
 Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Glu Tyr Lys Glu Arg Val
 65 70 75 80
 Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110

Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
 130 135 140
 Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
 145 150 155 160
 Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
 165 170 175
 Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
 180 185 190
 Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Ser Phe Leu Glu Gln Phe
 195 200 205
 Val Ala Asp Ser Pro Gly Asp Ile Ile Asp Phe Asp Thr Gln Gln Val
 210 215 220
 Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
 225 230 235 240
 Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
 245 250 255
 Asn Met Glu Lys Asn Ile Val Tyr Ile Val Arg Gly Glu Asp His Pro
 260 265 270
 Leu Leu Tyr Arg Gln Glu Leu Leu Ala Lys Glu Leu Asn Trp Phe Val
 275 280 285
 Pro Leu Gln Glu Pro Met Ile Cys Ser Ala Lys Val Arg Tyr Arg Ser
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 Pro Asp Glu Lys Cys Ser Val Tyr Pro Leu Glu Asp Gly Thr Val Lys
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 Val Ile Phe Asp Val Pro Val Lys Ala Val Thr Pro Gly Gln Thr Val
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<213> Chlamydia trachomatis serovar D

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 Cys Gly Gln Gly Ile Leu Glu Lys His Leu Pro Lys His Leu Pro Tyr
 65 70 75 80
 Leu Gly Ile Asp Leu Ser Pro Ser Leu Leu Arg Phe Ala Lys Lys Ser
 85 90 95
 Ala Ser Ser Lys Ser Arg Arg Phe Leu His His Asp Met Thr Gln Pro
 100 105 110
 Val Pro Ala Asp His His Glu Gln Phe Ser His Ala Thr Ala Ile Leu
 115 120 125
 Ser Leu Gln Asn Met Glu Ser Pro Glu Gln Ala Ile Ala His Thr Ala

10007693 120501

130 135 140
 Asn Leu Leu Ala Pro Gln Gly Arg Leu Phe Ile Val Leu Asn His Pro
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 Cys Phe Arg Ile Pro Arg Leu Ser Ser Trp Leu Tyr Asp Glu Pro Lys
 165 170 175
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 Pro Ile Val Val His Pro Gly Glu Lys His Ser Glu Thr Thr Tyr Ser
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 Phe His Phe Pro Leu Ser Tyr Trp Val Gln Ala Leu Ser Asn His Asn
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 Lys Asp Val His Gly Asn Leu Gly Leu Leu Thr Ser Ala Val Asp Asp
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 Pro Ser Pro Ser Leu Gln Gln Leu Leu Leu Asn Ala His Gln Glu Ala
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 Arg Ser Met Gly Asp Glu Tyr Leu Ser Gly Asp His Leu Leu Leu Ala
 100 105 110
 Phe Trp Arg Ser Thr Lys Glu Pro Phe Ala Ser Trp Arg Lys Thr Val
 115 120 125
 Lys Thr Thr Ser Glu Ala Leu Lys Glu Leu Ile Thr Lys Leu Arg Gln
 130 135 140
 Gly Ser Arg Met Asp Ser Pro Ser Ala Glu Glu Asn Leu Lys Gly Leu
 145 150 155 160
 Glu Lys Tyr Cys Lys Asn Leu Thr Val Leu Ala Arg Glu Gly Lys Leu
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 Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg Arg Thr Ile Gln Val
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 195 200 205
 Val Gly Lys Thr Ala Ile Ala Glu Gly Leu Ala Leu Arg Ile Val Gln
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 Gly Asp Val Pro Glu Ser Leu Lys Glu Lys His Leu Tyr Val Leu Asp
 225 230 235 240
 Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr Arg Gly Glu Phe Glu Glu

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Ile	Leu	Phe	Ile	Asp	Glu	Val	His	Thr	Leu	Val	Gly	Ala	Gly	Ala	Thr
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Asp	Gly	Ala	Met	Asp	Ala	Ala	Asn	Leu	Leu	Lys	Pro	Ala	Leu	Ala	Arg
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Gly	Thr	Leu	His	Cys	Ile	Gly	Ala	Thr	Thr	Leu	Asn	Glu	Tyr	Gln	Lys
305				310						315					320
Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg	Arg	Phe	Gln	Pro	Ile	Phe
			325					330					335		
Val	Thr	Glu	Pro	Ser	Leu	Glu	Asp	Ala	Val	Phe	Ile	Leu	Arg	Gly	Leu
			340					345				350			
Arg	Glu	Lys	Tyr	Glu	Ile	Phe	His	Gly	Val	Arg	Ile	Thr	Glu	Gly	Ala
		355					360					365			
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Arg	Met	Gln	Ile	Gly	Ser	Leu	Pro	Leu	Pro	Ile	Asp	Glu	Lys	Glu	Arg
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Leu	Lys	Phe	Ala	Glu	Glu	Glu	Ala	Glu	Arg	Thr	Ala	Asp	Tyr	Asn	Arg
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Val	Leu	Glu	Glu	Ser	Leu	Glu	Glu	Arg	Val	Val	Gly	Gln	Pro	Phe	Ala
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Asp	Pro	Gln	Arg	Pro	Leu	Gly	Val	Phe	Leu	Phe	Leu	Gly	Pro	Thr	Gly
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Val	Val	Leu	Phe	Asp	Glu	Ile	Glu	Lys	Ala	Asp	Lys	Glu	Val	Phe	Asn
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 Gly Ser Gln Glu Leu Ala Asp Tyr Cys Thr Lys Lys Gly Thr Ile Val
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 Asp-Lys-Glu-Ala-Val-Leu-Ser-Val-Val-Ala-Pro-Ala-Leu-Lys-Asn-Tyr
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 770 775 780
 Arg-Val-Ala-Leu-Arg-Leu-Leu-Glu-Arg-Lys-Ile-Ser-Leu-Thr-Trp-Asp
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 Asp-Ser-Leu-Val-Leu-Phe-Leu-Ser-Glu-Gln-Gly-Tyr-Asp-Ser-Ala-Phe
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 Leu-Ser-Lys-Ala-Leu-Leu-Lys-Gly-Asp-Ile-Lys-Pro-Gly-Met-Ala-Val
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 Pro-Ala-Val
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 <213> Chlamydia pneumoniae

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 <212> DNA
 <213> Chlamydia pneumoniae

<400> 111

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<400> 114

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agaaagctat aggtattttg cctgttctct cctgttactg ctacactcac tgtttgagaa 1020
accataagcc accctctctt tacttttaca aaacgcacat actctcaaca ctacgtttgc 1080
aactaactaa ttttgggtcc aacatacgtt tggatgataa aagaatcaag tacctagatt 1140
ccttagtaaa agcttttggc aaaaaaagc tcatctatt 1179

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<210> 115
 <211> 772
 <212> DNA
 <213> Homo sapiens

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<400> 115
gcaaaactgc tgacaaagct ggagacggaa ctacaacagc tactgttctt gctgaagcta 60
tctatacaga aggattacgc aatgtaacag ctggagcaaa tccaatggac ctcaaacgag 120
gtattgataa agctgttaag gttgttgttg atcaaatcag aaaaatcagc aaacctgttc 180
agcatcataa agaaattgct caagttgcaa caatttctgc taataatgat gcagaaatcg 240
ggaatctgat tgctgaagca atggagaaaag ttggtaaaaa cggctctatc actgttgaag 300
aagcaaaagg atttgaaacc gttttggatg ttgttgaagg aatgaatttc aatagagggt 360
acctctctag ctacttcgca acaaatccag aaactcaaga atgtgtatta gaagacgctt 420
tggttcta at ctacgataag aaaatttctg ggatcaaaga tttccttctt gttttacaac 480
aagttgctga atccggccgt cctcttctta ttatagcaga agacattgaa ggcaagctt 540
tagctacttt ggtcgtgaac agaattcgtg gaggattccg ggtttgcgca gttaaagctc 600
caggcttttg agatagaaga aaagctatgt tggaaagcat cgctatctta actggcgggtc 660
aactcattag cgaagagttg ggcatagaat tagaaaacgc taacttagct atgttaggta 720
aagctaaaaa agttatcgtt tctaagggaag acacgacat cgtcgaagga at 772

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<210> 116
 <211> 487
 <212> DNA
 <213> Homo sapiens

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<400> 116
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agacgtcctt tggagtctcg atacttacia ggcgcggtta agcaggcagc tgctgcaaag 180
gaaaaaaagg ctcttgaaca ggaagtatcc aaacaagaag aagaagcttc taaactctgg 240
gaagagaaac agagttatgc tgcgtcgtgt gtgaatgcc acaatttcag tgtaagaaag 300
caaatagaag agcaacagaa aaccatttcc aatccaggaa atgaccagac tcttcttggg 360
aagaaagatc cacatacatc cggagaacct gttatccaaa cggtacaaga ctgttctcag 420
gatcaagaag aagagaaaaa agttctagag cgattaaaca aacgttctct gacgtgtcag 480

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gatctta

487

<210> 117

<211> 1014

<212> DNA

<213> Homo sapiens

<400> 117

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atTTTTtctat taacagagga aaaataacct attgataaac agagcggtac aaggagatgc 180
aaataaagct gcttttaggat ccttacctag attctagaaa atgggttgcg gaatttgaac 240
aaacaaacta attaaaaatt aaaactgaaa aaaatagttt aaaacaacaa ctagaggata 300
ttttttcatg gcgctaaaag atacggcaaa aaaaatgact gacttggttg aaagtatcca 360
acaaaatttg cttaaagcag aaaaaggaaa taaagccgca gcacaaagag ttcgtacaga 420
atctatcaaa tttagaaaaga tcgcgaagggt atatcgtaaa gaggccatta aagcagaaaa 480
aatgggctta atgaaaaaaa gcaaagccgc tgctaaaaaa gctaaagctg ctgctaagaa 540
gcctgttcgc gctacaaaaa cagtggctaa aaaagcttgt acaaaaagaa cttgtgctac 600
taaagcaaag gtcaaaccac caaaaaaagc cgctcctaaa acaaaagtta aaacagcgaa 660
aaaaactcgc tcaacaaaaa aataatattt tagcgctttc tcttttttat agagggcact 720
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ggaaaaacct ttcactttct ttaggattca agttgctctc ctgctatcgt aactgtaaac 900
attttggcgt ctgtggaggc tggtcatctc ctcaaagga atatgcatcc tctttaaaaa 960
caaaagagct tgcgctccat aatttatttg cacctcttat cccatcccaa aata 1014

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<210> 118

<211> 287

<212> DNA

<213> Homo sapiens

<400> 118

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gaacaaacaa actaattaaa aattaaaact gaaaaaaata gtttaaaaca acaactagag 120
gatatttttt catggcgcta aaagatacgg caaaaaaaat gactgacttg ttggaaagta 180
tccaacaaaa tttgcttaaa gcagaaaaag gaaataaagc cgagcacaaa agagttcgt 240
cagaatctat caaattagaa aagatcgcgga aggtatatcg taaagag 287

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<210> 119

<211> 1002

<212> DNA

<213> Homo sapiens

<400> 119

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catatgcate accatcacca tcacatgagt attcgacct ctaatgggag tggaaatgga 60
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cctaattacg gaggccatac ggtatcttct cgaggaggat ttcaagggat atgcgtacga 180
atagccgatt tattccgtaa ctgtttctct cgtaatagag gcactactac tacgcatct 240
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cctattgtct ctacaggaga taagaaatta gatagcgcaa ttattcaagc agatttgcgt 360
gcgcagaata aacagacttt ggctacacat attcaaagta agctagggtc tatggaggga 420
caatctcctc aagattataa agctggtgcg tatagtgcgc taagattgat gctgtttact 480
ccaggcgaaa ctactgtgag tagcgagcgg gaacgtcaag cgtgcgttac gggtcgggat 540
ctctgggaac aggctgcagg agatcttgct accaatggga atacagatgg gcttatgtta 600
atggctaacc tatctgtggg agggaagcat gtgcctgcgg ggcatttaag agaatacatg 660
gatactgtaa agggtagcgt tactgatgag aacgaggcta cagatcctac ggtagatgcc 720

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atcttagatt	tagcagcaaa	aatcgatgcg	acggaattct	ctagtccctgg	ttcagggcaa	780
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cttcttggtt	tagaagatca	aaatgggcaa	gacccccaac	gtgttcaaga	taactcaaaa	900
gagttacaaa	aactgttaga	aaatgctcga	aaaacagatc	ctgagttata	tttccaaaca	960
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<210> 120
 <211> 1218
 <212> DNA
 <213> Homo sapiens

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	gagggatttt	ctagtgcac	tcgaggcgat	gagattgatg	atgtaccaga	tagtgaagag	120
	ggagagctag	aagagcgct	ttcggatcat	gcagagtcta	tcattaccga	gagctcgaa	180
	acgctgtttc	gtactacttc	ttcatcaggg	gtcagtgaag	atcttcagca	acacgttagc	240
	ttggaggaat	ctccacgaca	acgaggtttc	cttggacgga	tccgtgatgc	agtagcttct	300
	atcttgaagc	gtcgtgttgc	acgaaggaat	gaaaactatg	atgtgaaaaa	agcagaagag	360
	cagcaaggga	ttgtgcaata	tctgcaggat	tcgaaaatgc	ctgctttaac	gcgtgcctat	420
	cgccatctcc	gtgctttcaa	ttctgcatgc	ttacgtacga	ttcgtgagtt	tttcgctacc	480
	atctttcgtg	ctttaaggga	tgcgatttat	cgacattgta	cacgttctgg	gatcaacttt	540
	tgtggagctg	ataaagactc	tttagaagtt	cttgttgctg	tgggtttgct	tttgcgtagt	600
	gctaccttac	gctcttttga	acatgtcggt	gggaattacg	aagatcgatt	agtaaataat	660
	gatgctccgg	tgacaggtgc	ggggagaact	cttgttgatg	atgctgtaga	cgatattgaa	720
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	cgtgttcgaa	cttcggagct	cataggagaa	ctcattattc	tcgatttgct	tcctcctgta	1020
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	gttaattgcaa	acgtagaacg	attgcattcc	actttcgctc	atgagccaca	agcttatttg	1140
	cgtatgatcg	aaggtttggt	aaccaatttc	tttttcttac	ctagcgagga	agatcettct	1200
	tcggttggga	atatctaa					1218

<210> 121
 <211> 726
 <212> DNA
 <213> Homo sapiens

<400> 121	catatgcac	accatcacca	tcacacaaag	catggaaaac	gcattcgtgg	tatccaagag	60
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	cctactgtgc	gtttcgatca	aacggttgat	gtgtctgtta	aattagggat	cgatccaaga	180
	aagagtgtac	agcaaattcg	tggttcggtt	tctttacctc	acggtacagg	taaagttttg	240
	cgaatttttg	tttttgctgc	tgagataaag	gctgcagagg	ctattgaagc	aggagcggac	300
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	gcggttgcca	ctcccgatat	gatgagagag	gtcggaaaagc	taggaaaagt	tttaggtcca	420
	agaaacctta	tgctacgccc	taaagccgga	actgtaacaa	cagatgtggt	taaaactatt	480
	gcggaactgc	gaaaaggtaa	aattgaattt	aaagctgac	gagctggtgt	atgcaacgtc	540
	ggagttgcga	agctttcttt	cgatagtgcg	caaatcaaa	aaaatgttga	agcgttgtgt	600
	gcagccttag	ttaaagctaa	gccgcgaact	gctaaaggac	aatatttagt	taatttcact	660
	atttcctcga	ccatggggcc	aggggttacc	gtggatacta	gggagttgat	tgcgttataa	720
	gaattc						726

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			20					25					30			
Leu	Val	Gln	Ser	Thr	Ser	Gly	Pro	Asn	Tyr	Gly	Gly	His	Thr	Val	Ser	
		35					40					45				
Ser	Arg	Gly	Gly	Phe	Gln	Gly	Ile	Cys	Val	Arg	Ile	Ala	Asp	Leu	Phe	
	50					55					60					
Arg	Asn	Cys	Phe	Ser	Arg	Asn	Arg	Gly	Thr	Thr	Thr	Thr	Pro	Ser	Arg	
65				70						75					80	
Thr	Val	Ile	Thr	Gln	Ala	Asp	Ile	Tyr	His	Pro	Thr	Ile	Ser	Gly	Gln	
				85					90					95		
Gly	Ala	Gln	Pro	Ile	Val	Ser	Thr	Gly	Asp	Lys	Lys	Leu	Asp	Ser	Ala	
			100					105					110			
Ile	Ile	Gln	Ala	Asp	Leu	Arg	Ala	Gln	Asn	Lys	Gln	Thr	Leu	Ala	Thr	
		115					120					125				
His	Ile	Gln	Ser	Lys	Leu	Gly	Ser	Met	Glu	Gly	Gln	Ser	Pro	Gln	Asp	
	130					135					140					
Tyr	Lys	Ala	Gly	Ala	Tyr	Ser	Ala	Leu	Arg	Leu	Met	Leu	Phe	Thr	Pro	
145				150						155					160	
Gly	Glu	Thr	Thr	Val	Ser	Ser	Glu	Arg	Glu	Arg	Gln	Ala	Cys	Val	Thr	
				165					170					175		
Gly	Arg	Asp	Leu	Trp	Glu	Gln	Ala	Ala	Gly	Asp	Leu	Ala	Thr	Asn	Gly	
			180					185					190			
Asn	Thr	Asp	Gly	Leu	Met	Leu	Met	Ala	Asn	Leu	Ser	Val	Gly	Gly	Lys	
		195					200					205				
His	Val	Pro	Ala	Gly	His	Leu	Arg	Glu	Tyr	Met	Asp	Thr	Val	Lys	Gly	
	210					215					220					
Thr	Phe	Thr	Asp	Glu	Asn	Glu	Ala	Thr	Asp	Pro	Thr	Val	Asp	Ala	Ile	
225				230						235					240	
Leu	Asp	Leu	Ala	Ala	Lys	Ile	Asp	Ala	Thr	Glu	Phe	Ser	Ser	Pro	Gly	
				245					250					255		
Ser	Gly	Gln	Val	Ile	Leu	Asn	Tyr	Ile	Gly	Asn	Tyr	Gly	Gln	Val	Val	
		260						265					270			
Leu	Glu	Asn	Glu	Glu	Met	Asn	Leu	Leu	Val	Leu	Glu	Asp	Gln	Asn	Gly	
		275					280					285				
Gln	Asp	Pro	Gln	Arg	Val	Gln	Asp	Asn	Ser	Lys	Glu	Leu	Gln	Lys	Leu	
	290					295					300					
Leu	Glu	Asn	Ala	Arg	Lys	Thr	Asp	Pro	Glu	Leu	Tyr	Phe	Gln	Thr	Leu	
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<210> 123
<211> 405
<212> PRT
<213> Homo sapiens
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<400> 123
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 20 25 30
 Asp Asp Val Pro Asp Ser Glu Glu Gly Glu Leu Glu Glu Arg Val Ser
 35 40 45
 Asp His Ala Glu Ser Ile Ile Thr Glu Ser Ser Glu Thr Leu Phe Arg
 50 55 60
 Thr Thr Ser Ser Ser Gly Val Ser Glu Asp Leu Gln Gln His Val Ser
 65 70 75 80
 Leu Glu Glu Ser Pro Arg Gln Arg Gly Phe Leu Gly Arg Ile Arg Asp
 85 90 95
 Ala Val Ala Ser Ile Trp Lys Arg Arg Val Ala Arg Arg Asn Glu Asn
 100 105 110
 Tyr Asp Val Lys Lys Ala Glu Glu Gln Gln Gly Ile Val Gln Tyr Leu
 115 120 125
 Gln Asp Ser Lys Met Pro Ala Leu Thr Arg Ala Tyr Arg His Leu Arg
 130 135 140
 Ala Phe Asn Ser Ala Cys Leu Arg Thr Ile Arg Glu Phe Phe Ala Thr
 145 150 155 160
 Ile Phe Arg Ala Leu Arg Asp Ala Tyr Tyr Arg His Cys Thr Arg Ser
 165 170 175
 Gly Ile Asn Phe Cys Gly Ala Asp Lys Asp Ser Leu Glu Val Leu Val
 180 185 190
 Ala Val Gly Leu Leu Leu Arg Met Ala Thr Leu Arg Ser Phe Glu His
 195 200 205
 Val Gly Gly Asn Tyr Glu Asp Arg Leu Val Asn Asn Asp Ala Pro Val
 210 215 220
 Thr Gly Ala Gly Arg Thr Leu Val Asp Asp Ala Val Asp Asp Ile Glu
 225 230 235 240
 Ser Ile Leu Asn Thr Arg Thr Asn Trp Pro Gln His Val Met Ile Gly
 245 250 255
 Phe Ser Arg Gly Leu Val Gln Leu Cys Ala Thr Pro Tyr Asn Ala Thr
 260 265 270
 Ser Gln Glu Cys Phe Lys Ser Ile Val Arg Leu Glu Lys Glu Asp Pro
 275 280 285
 Ser Ser Asp Tyr Ser Gln Ala Leu Leu Leu Ala Gly Ile Ile Asp Arg
 290 295 300
 Leu Ala Glu Lys Ala Pro Met Ala Ala Lys Tyr Val Leu Asp Ala Leu
 305 310 315 320
 Arg Val Arg Thr Ser Glu Leu Ile Gly Glu Leu Ile Ile Leu Asp Leu
 325 330 335
 Leu Pro Pro Val Trp Lys Val Gly Arg Gly Gly Val Phe Pro Pro Val
 340 345 350
 Asn Glu Gln Leu Val Val Gln Ile Val Asn Ala Asn Val Glu Arg Leu
 355 360 365
 His Ser Thr Phe Ala His Glu Pro Gln Ala Tyr Leu Arg Met Ile Glu
 370 375 380
 Gly Leu Val Thr Asn Phe Phe Leu Pro Ser Glu Glu Asp Pro Ser
 385 390 395 400
 Ser Val Gly Asn Ile
 405

<210> 124
 <211> 238
 <212> PRT
 <213> Homo sapiens

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			20					25					30		
Ile	Asp	Ile	Leu	Lys	Gln	Cys	Pro	Thr	Val	Arg	Phe	Asp	Gln	Thr	Val
		35					40				45				
Asp	Val	Ser	Val	Lys	Leu	Gly	Ile	Asp	Pro	Arg	Lys	Ser	Asp	Gln	Gln
		50				55					60				
Ile	Arg	Gly	Ser	Val	Ser	Leu	Pro	His	Gly	Thr	Gly	Lys	Val	Leu	Arg
		65			70					75				80	
Ile	Leu	Val	Phe	Ala	Ala	Gly	Asp	Lys	Ala	Ala	Glu	Ala	Ile	Glu	Ala
				85					90					95	
Gly	Ala	Asp	Phe	Val	Gly	Ser	Asp	Asp	Leu	Val	Glu	Lys	Ile	Lys	Gly
			100					105					110		
Gly	Trp	Val	Asp	Phe	Asp	Val	Ala	Val	Ala	Thr	Pro	Asp	Met	Met	Arg
		115					120					125			
Glu	Val	Gly	Lys	Leu	Gly	Lys	Val	Leu	Gly	Pro	Arg	Asn	Leu	Met	Pro
		130				135					140				
Thr	Pro	Lys	Ala	Gly	Thr	Val	Thr	Thr	Asp	Val	Val	Lys	Thr	Ile	Ala
					150					155				160	
Glu	Leu	Arg	Lys	Gly	Lys	Ile	Glu	Phe	Lys	Ala	Asp	Arg	Ala	Gly	Val
				165					170					175	
Cys	Asn	Val	Gly	Val	Ala	Lys	Leu	Ser	Phe	Asp	Ser	Ala	Gln	Ile	Lys
			180					185					190		
Glu	Asn	Val	Glu	Ala	Leu	Cys	Ala	Ala	Leu	Val	Lys	Ala	Lys	Pro	Ala
			195				200					205			
Thr	Ala	Lys	Gly	Gln	Tyr	Leu	Val	Asn	Phe	Thr	Ile	Ser	Ser	Thr	Met
		210				215					220				
Gly	Pro	Gly	Val	Thr	Val	Asp	Thr	Arg	Glu	Leu	Ile	Ala	Leu		
					230					235					

<213> Chlamydia trachomatis

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ccactgggaa	atctcaaaca	acagggcaaa	tagcgggagg	agcgatctac	tcccctactg	180
ttacattgaa	ttgtcctgcg	acattctcta	acaatacagc	ctctatagct	acaccgaaga	240
cttcttctga	agatggatcc	tcaggaaatt	ctattaaaga	taccattgga	ggagccattg	300
cagggaacag	cattacccta	tctggagtct	ctcgattttc	agggaaatcg	gctgatttag	360
gagctgcaat	aggaactcta	gctaattgcaa	atacaccag	tgcaactagc	ggatctcaaa	420
atagcattac	agaaaaaatt	actttagaaa	acggttcttt	tatttttgaa	agaaaccaag	480
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tcaatcaaaa	tacatccact	catgatggaa	gcgctatcta	ctttacaaaa	gatgctacga	600
tttagtcttt	aggatctgtt	ctttttacag	gaaataacgt	tacagctaca	caagctagtt	660
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<213> Chlamydia trachomatis

<400> 126

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gaaagaagcc gacactcgag cgctcttctc ctaaaaatct tgttttttct ctgcttccga 180
gttataacgc ggctgtctca taaccacacac taacatgatg aaacctctac gtttcgggta 240
tttcttttgc acaatctatt ttactttggt acaggcagcg tttgctaaag aaccgaattc 300
ttgtcccgac tgccagaata attggaaaga agtcacccac acggatcaac tccctgaaaa 360
catcattcat gctgatgatg cttgttatca ctctgggtat gtacaggctc tcattgatat 420
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tcttcttaca gatgatgta cgcgcaacgc cattatcaac ctaattaaag accttccatt 540
cattcactcc gtagaaatct gccaaagcat ctatcaaacc tgatcatcat aaggccctca 600
tggaagact tctcttccag aacaacgttc tttctgtaca aaggctctgt gaaaagaagc 660
tatttggtta ccacagaata ccattctatt ctgcctctt gtagcagata ctatccaagc 720
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<210> 127

<211> 433

<212> DNA

<213> Chlamydia trachomatis

<400> 127

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agaaatcgat gagaagcttt ttccctaaga aagatgatgc gtttcatcgg tctagtctgc 180
tattctactc tccaatgggt ccgcattttt gggcagagct tcgcaatcat tatgcaacga 240
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atggttaagag ccataaagta ggattttctaa gaattcctac atatagttgg caggacatgg 420
aagattttga tcc 433

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<210> 128

<211> 803

<212> DNA

<213> Chlamydia trachomatis

<400> 128

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ttgctgataa tatcaaagtt gggcaaatga cagagccgct caaggaccag caaataatcc 180
ttgggacaac atcaacacct gtcgcagcca aaatgacagc ttctgatgga atatctttaa 240
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cttaccagct tattctagaa aagttgggag atcaaattct tgatggaatt gctgatacta 360
ttgttgatag tacagtccaa gatattttag acaaaatcaa aacagaccct tctctaggtt 420
tggtgaaagc ttttaacaac tttccaatca ctaataaaat tcaatgcaac ggggtattca 480
ctcccagtaa cattgaaact ttattaggag gaactgaaat aggaaaattc acagtccac 540
ccaaaagctc tgggagcatg ttcttagtct cagcagatat tattgcatca agaattggaag 600
ggcggtttgt tctagctttg gtacgagaag gtgattctaa gccctgcgag attagttatg 660
gatactcatc aggcattcct aatttatgta gtctaagaac cagtattact aatacaggat 720
tgactccgac aacgtattca ttacgtgtag gcgggtttaga aagcgggtgtg gtatgggtta 780
atgccctttc taatctcgtg ccg 803

```

<210> 129

<211> 842

<212> DNA

<213> Chlamydia trachomatis

<400> 129

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tgggaatgtc gaagaatacg attacgttct cgtatctata ggacgccgtt tgaatacaga 60
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tgccacaatg cgcacaaaac tacctaacat ttatgctatt ggagatatca caggaaaatg 180
gcaacttgcc catgtagctt ctcatcaagg aatcattgca gcacggaata tagctggcca 240
taaagaggaa atcgattact ctgccgtccc ttctgtgata ttaccttcc ctgaagtcgc 300
ttcagtaggc ctctcccaa cagcagctca acaacaaaa atccccgtca aagtaacaaa 360
attcccattt cgagctattg gaaaagcggc cgcaatgggc gaggccgatg gatttgcagc 420
cattatcagc catgagacta ctcagcagat cctaggagct tatgtgattg gccctcatgc 480
ctcatcactg atttccgaaa ttaccctagc agttcgtaat gaactgactc ttcttctgtat 540
ttacgaaact atccacgcac atccaacctt agcagaagtt tgggctgaaa gtgcgttggt 600
agctgctgat accccattac atatgcccc tgctaaaaaa tgaccgattc agaattctct 660
actcctaaaa aatctatacc cgccagattc cctaagtggc tacgccagaa actcccttta 720
gggcggtgat ttgctcaaac tgataatact atcaaaaata aagggttcc tacagtctgt 780
gaggaagcct cttgtccgaa tcgcacccat tgttggtcta gacatacagc tacctatcta 840
gc

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<210> 130

<211> 813

<212> DNA

<213> Chlamydia trachomatis

<400> 130

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aaaatacttt gagctgcaca agctccccc tgttctagag aagaacatga tgcaaattcc 60
aatccaccct taatcttttc aaagataaga tcttctgtag aatataaagc cgctccagac 120
aaagaagctt tcacgtcagt taatgtgatt ccagccttac tactatcccc aacaaaagca 180
atacctaaaa aagattctcc gtcacgagga gaatcaaggt tgctgctcgt aaaactacaa 240
attaaccctt gggaagagac ttgatcctgt tgggtccacac cttggaaaac tacgggattg 300
gttactgaga acaaaagtact ttgctctacc ttaccgggaa gagtatccgc atctttctct 360
tggaagaagc ttggatctcc tacaattaac ctatactgtc cttcagcctg actatcttta 420
gaccaaacga atagatctcg aatttgggtc aacaataaaa ccgcttgagg gcctacatat 480
accagctcat ttacagactg tctccagca tgaagatcta cgcaactagc taaccgcgta 540
acagaggcaa ggatagctgc tactacagac aaagaaaact tagaacaggt gctttttata 600
tctttctcgg aactcatttc aaacctgcga aatagcactt ttttgacaaa ctagcgtacc 660
gaaacaatcg gtccaacaac gcgttctgcc tatgatttca caaagacaaa acgaccata 720
gacaagctcc agagacgaca ttagagcttt agaccgtgga atgtacaatg ctgactgctt 780
tttgagaaag attttttata aagaacaggc cct

```

<210> 131

<211> 1947

<212> DNA

<213> Chlamydia trachomatis

<400> 131

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gatagagatt ctactacccc atccatggca ttcaacctct catcagtaaa cactttatta 120
gagttgttta tctgcccatc atcgatgata tcttctgaag tctttaatac cttcttacat 180
aagatccatc tctccggaga acagtgtcct tctatggata aaattcctac gcagatatct 240
acgcatccca aaatagcagg aatacctaga tagatggcat ttacaaacga agctgccgaa 300
actaggaata tcaaagcagt aatcactaaa agtagtccta tcaccactaa tcccacctta 360
aatgcagtgg aagatagaag attcgatata cgctctttca gtgttaatgg tgcagaacta 420
gtggaaatat cctgtgccga attggaagat ccagctcctt gaacaacggg tacagtgtct 480
atattttaca ttctttttt ggttgtgagc agggagtcta cacaacact tatttttttc 540

```

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<210> 132
<211> 1278
<212> DNA
<213> Chlamydia trachomatis
```

$$\begin{array}{ll} \langle 210 \rangle & 133 \\ \langle 211 \rangle & 916 \end{array}$$

<212> DNA

<213> Chlamydia trachomatis

<400> 133

```

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ggccagttct tcaaaattat gccttcattt cageaggaga gacacttact ctgaaagatt 120
tttcgagttt gatgttctcg aaaaatgttt cttagcggaga aaaggggaatg atctcagggg 180
aaaccgtgag tatttcggga gcaggcgaag tgattttttg ggataactct gtgggggtatt 240
ctcctttgtc tattgtgcca gcatcgactc caactcctcc agcaccagca ccagctcctg 300
ctgcttcaag ctctttatct ccaacagtta gtgatgctcg gaaaggggtct attttttctg 360
tagagactag tttggagatc tcaggcgtca aaaaaggggt catgttcgat aataatgccg 420
ggaatttttg aacagttttt cgaggtaata gtaataataa tgctggtagt gggggtagtg 480
ggtctgctac aacaccaagt tttacagtta aaaactgtaa agggaaagt tctttcacag 540
ataacgtagc ctctgttgga ggcgagtag tctacaaagg aactgtgctt ttcaaagaca 600
atgaaggagg catattcttc cgagggaaca cagcatacga tgatttaggg attcttgctg 660
ctactagtcg ggatcagaat acggagacag gaggcggtag aggagttatt tgctctccag 720
atgattctgt aaagtttgaa ggcaataaag gttctattgt ttttgattac aactttgcaa 780
aaggcagagg cggaagcatc ctaacgaaag aattctctct tgtagcagat gattcggttg 840
tctttagtaa caatacagca gaaaaaggcg gtggagctat ttatgctcct acgtatcgat 900
ataagcacga atggag                                     916

```

<210> 134

<211> 751

<212> DNA

<213> Chlamydia trachomatis

<220>

<221> misc_feature

<222> 741

<223> n = A,T,C or G

<400> 134

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ctgagcaggc acctcacttt ctttcttctc gatactctct ttaacaatag gattcccaag 120
gttttgatct gaggataagt tttgaaatcc agcaaacagt ctgttatcat aaaagactgg 180
ctcctgaata cttgggactg tatccctttc taactctaac tccaaacctt cacgcttgat 240
aacaatgcgc ttcacgtgcc gaattcggca cgaggctctt tcttacgagg atctcgagtc 300
aagaagcctt gagccttcaa ttcttgcttc atgtcttctt tctcttgagc aacagctcta 360
gctaaaccca atcgagtagc aataacctga ccttgaaccc ctctccact tactcggata 420
atcaaatcga aactgttgac atcacggagc attctgagcg gagctaagat ggttgctctt 480
tgaacttcaa gagggaaata ttgctctaaa gtctttccat ttacgtcaat ttttccattc 540
ccagaacgaa gacgaacgca cacctgcttt cttctgcctg ttgcaacaga ctcttgatc 600
atattctttg tcacaaatta ccccaaatta cgcgtctaaa acaattgggt tgatagcttc 660
atactgtgcg taagaactac ctttcaaaac tcttaaagat ttcatttgac gtcttccaag 720
ttttgtttta ggcaacattc nttaacagca t                                     751

```

<210> 135

<211> 410

<212> DNA

<213> Chlamydia trachomatis

<400> 135

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ataatccaga ctcttctctc tctggagata gcgctggaga ctctgaagaa ctgactgaga 60
cagaagctgg ttctacaaca gaaactccta ctttaatagg aggaggtgct atctatggag 120
aaactgttaa gattgagaac ttctctggcc aaggaatatt ttctggaac aaagctatcg 180
ataacaccac agaaggctcc tcttccaaat ctgacgtcct cggaggtgcg gtctatgcta 240

```

aaacattggt	taatctcgat	agcgggagct	ctagacgaac	tgtcaccttc	tccgggaata	300
ctgtctcttc	tcaatctaca	acaggtcagg	ttgctggagg	agctatctac	tctcctactg	360
taaccattgc	tactcctgta	gtattttcta	aaaactctgc	aacaaacaat		410

<210> 136

<211> 2719

<212> DNA

<213> Chlamydia trachomatis

<400> 136

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cgggtgcatt	cataaacagc	ttcctcgtaa	tggtgtagat	tggtcggggg	atattcaact	180
actttaccaa	gtcacaggaa	gaaatatccc	tcgcaatgct	agagatcaat	acagagactg	240
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aagcacggga	caaatcaacc	atgttatgat	gaaaatctcg	gagcatgaat	tcattcatgc	360
tgcggaaaaa	atagggaag	tagaaaaagt	aatcctagga	aatagggtct	tctttaaagg	420
gaatctatct	tgtcatttag	gtgaaccgcc	tatagaagct	gtttttggcg	ttcctaaaaa	480
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aatagcttat	cgtttgagga	attggaaact	cttacgagct	ttcttacgac	cgtatttttt	600
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accgataaat	ctcgtgccg					2719

<210> 137
 <211> 2354
 <212> DNA
 <213> Chlamydia trachomatis

<400> 137
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 ctaaagtgtc ctaagtaagg atgttttttag gggaaatagc gattttcagt gttgagaagc 180
 ttagttacaa gacaataaac aaggctaaga aaaacctttc ttagccttgt ttctcaacga 240
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 ttcgttaatg ctaaggagtt taacagcaag cttgtctcct tctttgacaa agccagagat 360
 attgtctact ttttgttttag acaattcaga aatatgacag agcccttctt ttcttgggag 420
 gacttctacg aatactccaa atgttgcgat agatgtaaca cggccattat aaactttacc 480
 gacttcaact tctccagtta atccttcgat aagttcttta gctttgttaa tcgattcttg 540
 ggtgcttgca gctatgttaa tgacgcgctc atcattgatg tcaacttgcg caccagaacg 600
 ctcgataatt tgacggattt gttttcctcc gggaccaatg accgttgcgga tttttgaggt 660
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 aaccaagtta gcaataacgg attoctctaa ttctttcgag gcttgctcta gagcttcttt 1560
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 ccatgcttca atagcatcg atatttttag tatataggtt tgcccaaaaa caatagcttc 1740
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 tgttcctgcc atgacgagat ccagcctgga ggcacttaac tcatctctgg ttgggttaat 1860
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 cccgtcgtaa gaccaaagc aggacaagac ttgaatatct tgcatgagtc tattaggaaa 2040
 cgacggacgc aaagagcgat ccattagccg agaaacaaga atttctctct cggaaggccg 2100
 tctttcacgt tttagaaatc ctccagaggt tcttctgctg gaggaaaact tctcttgata 2160
 gtctactctg aaaggcagaa aatcgacagc ctctgacaag gaggctgcac acgctgaaga 2220
 aaaaaccocaa gtctcgttca ttttgaogag aacagcccca ctggcctggc gagctatttt 2280
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 catggagttg tcct 2354

<210> 138
 <211> 898
 <212> DNA
 <213> Chlamydia trachomatis

<400> 138
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 ccggaacagc taaaggtatt acagctttcc aaatggatat caagatagag ggaatcactc 120

```
<210> 139
<211> 660
<212> PRT
<213> Chlamydia trachomatis
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Ser	Asn	Gln	Ser	Ser	Met	Asn	Pro	Ile	Ile	Asn	Gly	Gln	Ile	Ala	Ser
			20					25					30		
Asn	Ser	Glu	Thr	Lys	Glu	Ser	Thr	Lys	Ala	Ser	Glu	Ala	Ser	Pro	Ser
			35				40					45			
Ala	Ser	Ser	Ser	Val	Ser	Ser	Trp	Ser	Phe	Leu	Ser	Ser	Ala	Lys	Asn
	50					55					60				
Ala	Leu	Ile	Ser	Leu	Arg	Asp	Ala	Ile	Leu	Asn	Lys	Asn	Ser	Ser	Pro
	65				70					75					80
Thr	Asp	Ser	Leu	Ser	Gln	Leu	Glu	Ala	Ser	Thr	Ser	Thr	Ser	Thr	Val
				85					90					95	
Thr	Arg	Val	Ala	Lys	Asp	Tyr	Asp	Glu	Ala	Lys	Ser	Asn	Phe	Asp	
			100				105					110			
Thr	Ala	Lys	Ser	Gly	Leu	Glu	Asn	Ala	Lys	Thr	Leu	Ala	Glu	Tyr	Glu
			115				120					125			
Thr	Lys	Met	Ala	Asp	Leu	Met	Ala	Ala	Leu	Gln	Asp	Met	Glu	Arg	Leu
	130					135					140				
Ala	Asn	Ser	Asp	Pro	Ser	Asn	Asn	His	Thr	Glu	Glu	Val	Asn	Asn	Ile
	145				150					155				160	
Lys	Lys	Ala	Leu	Glu	Ala	Gln	Lys	Asp	Thr	Ile	Asp	Lys	Leu	Asn	Lys
				165					170					175	
Leu	Val	Thr	Leu	Gln	Asn	Gln	Asn	Lys	Ser	Leu	Thr	Glu	Val	Leu	Lys
			180					185					190		
Thr	Thr	Asp	Ser	Ala	Asp	Gln	Ile	Pro	Ala	Ile	Asn	Ser	Gln	Leu	Glu
			195				200					205			
Ile	Asn	Lys	Asn	Ser	Ala	Asp	Gln	Ile	Ile	Lys	Asp	Glu	Arg	Gln	
	210					215					220				
Asn	Ile	Ser	Tyr	Glu	Ala	Val	Leu	Thr	Asn	Ala	Gly	Glu	Val	Ile	Lys
	225				230					235				240	
Ala	Ser	Ser	Glu	Ala	Gly	Ile	Lys	Leu	Gly	Gln	Ala	Leu	Gln	Ser	Ile
				245					250					255	
Val	Asp	Ala	Gly	Asp	Gln	Ser	Gln	Ala	Ala	Val	Leu	Gln	Ala	Gln	Gln
			260				265						270		
Asn	Asn	Ser	Pro	Asp	Asn	Ile	Ala	Ala	Thr	Lys	Glu	Leu	Ile	Asp	Ala
		275					280					285			

Ala Glu Thr Lys Val Asn Glu Leu Lys Gln Glu His Thr Gly Leu Thr
 290 295 300
 Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln Ile Ser Gln Ala Gln
 305 310 315 320
~~Lys Asp Ile Gln Glu Ile Lys Pro Ser Gly Ser Asp Ile Pro Ile Val~~
~~325 330 335~~
 Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser Ala Ala Gly Ala Leu
 340 345 350
 Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu Leu Leu Asp Asp Val
 355 360 365
 Asp Asn Glu Met Ala Ala Ile Ala Leu Gln Gly Phe Arg Ser Met Ile
 370 375 380
 Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala Lys Glu Leu Gln Ala
 385 390 395 400
 Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln Leu Val Gly Ala Asp
 405 410 415
 Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala Leu Ala Gln
 420 425 430
 Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala Thr Ala Met Gly Gln
 435 440 445
 Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly Ser Ala Gly Thr Ala
 450 455 460
 Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr Ala Phe Ser
 465 470 475 480
 Ser Thr Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp Gly Tyr Ser
 485 490 495
 Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg Ser Gly Val
 500 505 510
 Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser Arg Ser Val
 515 520 525
 Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp Ala Ser Gln
 530 535 540
 Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu Gly Asp Val
 545 550 555 560
 Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr Ile Val Ser
 565 570 575
 Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln Lys Leu Thr Ala Ser
 580 585 590
 Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln Asn Ser Ala
 595 600 605
 Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu Phe Val Asp
 610 615 620
 Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn Ala Phe Arg Lys Gln
 625 630 635 640
 Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile Ala Ser Leu Phe Ser
 645 650 655
 Gly Tyr Leu Ser
 660

<210> 140

<211> 598

<212> PRT

<213> Chlamydia trachomatis

<400> 140

Met His His His His His His Met Ser Ile Arg Gly Val Gly Gly Asn

				5					10					15	
Gly	Asn	Ser	Arg	Ile	Pro	Ser	His	Asn	Gly	Asp	Gly	Ser	Asn	Arg	Arg
			20					25					30		
Ser	Gln	Asn	Thr	Lys	Gly	Asn	Asn	Lys	Val	Glu	Asp	Arg	Val	Cys	Ser
		35				40						45			
Leu	Tyr	Ser	Ser	Arg	Ser	Asn	Glu	Asn	Arg	Glu	Ser	Pro	Tyr	Ala	Val
	50					55					60				
Val	Asp	Val	Ser	Ser	Met	Ile	Glu	Ser	Thr	Pro	Thr	Ser	Gly	Glu	Thr
	65				70					75					80
Thr	Arg	Ala	Ser	Arg	Gly	Val	Leu	Ser	Arg	Phe	Gln	Arg	Gly	Leu	Val
				85					90					95	
Arg	Ile	Ala	Asp	Lys	Val	Arg	Arg	Ala	Val	Gln	Cys	Ala	Trp	Ser	Ser
			100					105					110		
Val	Ser	Thr	Ser	Arg	Ser	Ser	Ala	Thr	Arg	Ala	Ala	Glu	Ser	Gly	Ser
		115					120					125			
Ser	Ser	Arg	Thr	Ala	Arg	Gly	Ala	Ser	Ser	Gly	Tyr	Arg	Glu	Tyr	Ser
	130					135					140				
Pro	Ser	Ala	Ala	Arg	Gly	Leu	Arg	Leu	Met	Phe	Thr	Asp	Phe	Trp	Arg
	145				150					155					160
Thr	Arg	Val	Leu	Arg	Gln	Thr	Ser	Pro	Met	Ala	Gly	Val	Phe	Gly	Asn
				165					170					175	
Leu	Asp	Val	Asn	Glu	Ala	Arg	Leu	Met	Ala	Ala	Tyr	Thr	Ser	Glu	Cys
			180					185					190		
Ala	Asp	His	Leu	Glu	Ala	Lys	Glu	Leu	Ala	Gly	Pro	Asp	Gly	Val	Ala
		195					200					205			
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	210					215					220				
Gln	Asp	Lys	Gly	Ala	Ala	Arg	Lys	Leu	Leu	Asn	Asp	Pro	Leu	Gly	Arg
	225				230					235					240
Arg	Thr	Pro	Asn	Tyr	Gln	Ser	Lys	Asn	Pro	Gly	Glu	Tyr	Thr	Val	Gly
			245						250					255	
Asn	Ser	Met	Phe	Tyr	Asp	Gly	Pro	Gln	Val	Ala	Asn	Leu	Gln	Asn	Val
			260					265					270		
Asp	Thr	Gly	Phe	Trp	Leu	Asp	Met	Ser	Asn	Leu	Ser	Asp	Val	Val	Leu
		275					280					285			
Ser	Arg	Glu	Ile	Gln	Thr	Gly	Leu	Arg	Ala	Arg	Ala	Thr	Leu	Glu	Glu
	290					295					300				
Ser	Met	Pro	Met	Leu	Glu	Asn	Leu	Glu	Glu	Arg	Phe	Arg	Arg	Leu	Gln
	305				310					315					320
Glu	Thr	Cys	Asp	Ala	Ala	Arg	Thr	Glu	Ile	Glu	Glu	Ser	Gly	Trp	Thr
				325					330					335	
Arg	Glu	Ser	Ala	Ser	Arg	Met	Glu	Gly	Asp	Glu	Ala	Gln	Gly	Pro	Ser
			340					345					350		
Arg	Val	Gln	Gln	Ala	Phe	Gln	Ser	Phe	Val	Asn	Glu	Cys	Asn	Ser	Ile
		355					360					365			
Glu	Phe	Ser	Phe	Gly	Ser	Phe	Gly	Glu	His	Val	Arg	Val	Leu	Cys	Ala
	370					375					380				
Arg	Val	Ser	Arg	Gly	Leu	Ala	Ala	Ala	Gly	Glu	Ala	Ile	Arg	Arg	Cys
	385				390					395					400
Phe	Ser	Cys	Cys	Lys	Gly	Ser	Thr	His	Arg	Tyr	Ala	Pro	Arg	Asp	Asp
				405					410					415	
Leu	Ser	Pro	Glu	Gly	Ala	Ser	Leu	Ala	Glu	Thr	Leu	Ala	Arg	Phe	Ala
			420					425					430		
Asp	Asp	Met	Gly	Ile	Glu	Arg	Gly	Ala	Asp	Gly	Thr	Tyr	Asp	Ile	Pro
		435					440					445			
Leu	Val	Asp	Asp	Trp	Arg	Arg	Gly	Val	Pro	Ser	Ile	Glu	Gly	Glu	Gly
						455					460				

Ser Asp Ser Ile Tyr Glu Ile Met Met Pro Ile Tyr Glu Val Met Asn
 465 470 475 480
 Met Asp Leu Glu Thr Arg Arg Ser Phe Ala Val Gln Gln Gly His Tyr
 485 490 495
 ---Gln---Asp---Pro---Arg---Ala---Ser---Asp---Tyr---Asp---Leu---Pro---Arg---Ala---Ser---Asp---Tyr---
 500 505 510
 Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro Pro Leu Pro Pro Arg Tyr
 515 520 525
 Gln Leu Gln Asn Met Asp Val Glu Ala Gly Phe Arg Glu Ala Val Tyr
 530 535 540
 Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr Val Val Thr Gln Pro Gln
 545 550 555 560
 Glu Arg Ile Pro Asn Ser Gln Gln Val Glu Gly Ile Leu Arg Asp Met
 565 570 575
 Leu Thr Asn Gly Ser Gln Thr Phe Arg Asp Leu Met Lys Arg Trp Asn
 580 585 590
 Arg Glu Val Asp Arg Glu
 595

<210> 141
 <211> 788
 <212> DNA
 <213> Chlamydia trachomatis

<400> 141
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 gcgtcatcct ctaaaaagga aggaaatgac cgtgctttct acacatgccg aaggcggtaa 120
 ggaagcaatt acccattgcc aagttctagc tacgaatgga cgattaagtg tggttgctct 180
 ataccagaa acaggcagaa cccaccagct tcgtgtacat atgaagcacc tgggcacacc 240
 gattctcgga gatcccgttt acgggatccc ctctataaat ttctcgttatg gtcttgacaa 300
 acaacaattg catgcctata gcttggtttt tgctcatccg gagagtgcgg agcgagtga 360
 gctagtgaaca aagcttccag acgatatgac ttcccttaata gaaaaggaat ttagagaagg 420
 tgtctctata ctggatgggt cgtgtgattg gtttaaaatc actaggtagt tttgtttttt 480
 aagtaagaag tataaaatag attatagata ctatttttat ttttctttca caccttcaga 540
 aaaaagcttg ttaggattt gcttcgcatg aaagagtttt tagcgtacat tgtaaaaaat 600
 cttgttgata agccagagga agtgcacatg aaagaggtgc agggaaacca tacgattatc 660
 tacgaattga ctgttgctaa gggagatatc ggtaaaatta tcggtaaaga aggacgcact 720
 attaaggcta tccgtacttt attggtttcc gtagcaagtc gagataatgt gaaagtcagc 780
 ctagaat 788

<210> 142
 <211> 788
 <212> DNA
 <213> Chlamydia trachomatis

<400> 142
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 gcgtcatcct ctaaaaagga aggaaatgac cgtgctttct acacatgccg aaggcggtaa 120
 ggaagcaatt acccattgcc aagttctagc tacgaatgga cgattaagtg tggttgctct 180
 ataccagaa acaggcagaa cccaccagct tcgtgtacat atgaagcacc tgggcacacc 240
 gattctcgga gatcccgttt acgggatccc ctctataaat ttctcgttatg gtcttgacaa 300
 acaacaattg catgcctata gcttggtttt tgctcatccg gagagtgcgg agcgagtga 360
 gctagtgaaca aagcttccag acgatatgac ttcccttaata gaaaaggaat ttagagaagg 420
 tgtctctata ctggatgggt cgtgtgattg gtttaaaatc actaggtagt tttgtttttt 480
 aagtaagaag tataaaatag attatagata ctatttttat ttttctttca caccttcaga 540

aaaaagcttg tgtaggattt gcttcgcatg aaagagtttt tagcgtacat tgtaaaaaat 600
 cttgttgata agccagagga agtgcattctg aaagaggtgc agggaaaccaa tacgattatc 660
 tacgaattga ctgttgctaa gggagatatc ggtaaaatta tcggtaaaga aggacgcact 720
 attaaggcta tccgtacttt attgggtttcc gtagcaagtc gagataatgt gaaagtcagc 780
 ctagaaat 788

<210> 143

<211> 1754

<212> DNA

<213> Chlamydia trachomatis

<400> 143

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 tcgaggaaac gttgtaaaaa tagcgtgca gtaatcgatc ctgcacgatt gctgccgata 180
 tttttcatat ctgcaatata tgaatgaagt gcctggatc atttctctac caaaggcatt 240
 ctccatagag cttccccggg ctctgatgaa gcttctgcta gatctcttgc caacagctcg 300
 ttatttgcaa aaaatccagc cacagattct cctaaagaaa caaccatagc acccgtaag 360
 gtagcaaatg caatgatgag ggtaggatta caatatattca aagcatagga gatggcatct 420
 gctaaaatca aacgcccttc cgcattcagt ctgccaatct ctacagaaag gccggtcatt 480
 ccaacatata catctcccat cttataggca gccgatccaa tcgcattctc ttagcttgga 540
 atgatcccg tccattgat cggaagctcc aaggaaagcta aagcagaaaa aattcctaga 600
 acggtagccg ctccagccat gtcttccttc atggtaatca ttgccttccc aggtttcaaa 660
 tctagtcttc cggaatcgaa tgttaccctt ttaccaatga gtacggttct atcttttagat 720
 ttaggtttac cttggtaatc cagaacaata aaccgaggct caacagcagc gcccttggca 780
 acagcagcca acaatcccat tttttctttt aatatcgctt tctatctag aattttttaca 840
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 agcaccctg ctgccaaagt cgttaaaaaac tcttctaagg agaagcgcaa ctgtgaaatt 1140
 gttgggagt aaatatattac aatcttacac ttagcttttc ttaaaacagt agtagcctga 1200
 gcgtaggctt ctaaaacggt tgttcggat acttcttcgc tcttctctag accaagaaga 1260
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 cctgaaaaat tggataatgc tttttgatag acaagcttgt agtcctcatc aacaaccgca 1380
 gcttcttgag ctttagaatt cttcatccaa aaaggaagaa caagagcatc cgctttcgat 1440
 cgtttatccc aactcgcttg agaatagagt aataccacaa taacctcttt gttgaatcga 1500
 ttgagtcatt aattaaacac cagtagaacg cgttttgctc atttccgtct caagctggcg 1560
 gcctgaccca ttctctgcag tagaaaaggc cagaacaagc aaaacaacat ggttttcatc 1620
 tctacattat tccgagatga aaaaaaggac tataggaaag agtagtcttt ttagcaataa 1680
 agctctgtta ctccatagac aagaagattc aagagcttct taagatatgg gattgaatca 1740
 aatgaataga atag 1754

<210> 144

<211> 3037

<212> DNA

<213> Chlamydia trachomatis

<400> 144

agtgcggatc atgattctgg ggagctgttt taaaaataga tactaaaaag cttcctaagt 60
 gttcagcaaa aaatgaagcc aaagaaaacg ttaagaacat ggagacaatg aacgtaatcg 120
 cagaaggaaa atcttgagat ttggctacct gccctttttt tctagcatcc cgaagacgct 180
 tgggggtcgc cttttctgtt ttttcgccc tagatggcca gttgcttaag cgctataagg 240
 aatacttcgc aagttaccgt atataaatgt ttttctcaag aaagaaggtg gcagatgctc 300
 atcccattta taaacaaaga gtaaggggtt ctttagagaa cggaatattt tttttaaaga 360
 gcgtttttca tgaagcacta atcttgcttt ttcttttagaa tttctttttc cttaataata 420
 aaaaggctgt gttagcctta agaaaaagct gtacaacttc ttaggtaatg aaaatgggac 480

aaacagagtg tggaatagta ggtcttccta atgtagggaa atcaggatta tttaatgcgt 540
 tgacaggcgc acaagttgcc tcctgtaatt atcccttctg cacaatagat cctaattgtcg 600
 gtattgtgcc tgttatcgat ccaagggttag agaccttagc acgtatcagt cagagccaaa 660
 agattatcta tgcagatatg aagttttagt acatcgcagg attagtaaaa ggagcagcta 720
 gcggtgetgg cttagggaaat cgttttttat cacatattcg agagactcac gctattgcgc 780
 atgttgttcg ttgcttcgac aatgatgata taacceatgt atctgggaaa attgatcctg 840
 aagaagatat agctgtgatt aatctagagc tcgtattagc agacttttct tctgccacta 900
 gcgtgcgaga gaaacttggg aaacaggcta aagggaaaaa agatattggg cagttgtctac 960
 ctctattaga tcgcgtagtt gatcatttag aatcaggaaa tcctgttcga accctctcgc 1020
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 aactacgtgc tgaaggtagg gactatattg ttcaggatgg ggatattatg ctctttttgc 1560
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 aaccaccctt cccaagtcta gaatcgtaac ccaagacaat tcttgatgga cgtagagtct 2160
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 ctccagattt gctaggaaaac ttctgttaaaa aagaaaagcaa agcttgggtg cctaaatgac 2400
 acccatcgaa aaaacctata gtaacagatt ctacaggatt agaggacggg agcaggctgt 2460
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 agattcccat caatacactg atcgatagag aagcttccac tacgtaaccg tcggagtctt 2580
 tctaaataag ctccgcatcc caacatattg cctaactcat gagcgatact gcggatgtat 2640
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 ccttgaaaaat agcttgtgca agtcaaaact tcgtccatag ttggaacttt tttagatcgc 2880
 ccaacaattt tcccatcgca atcgtaagta tccgtcgtgg ttctaaatg cgctaccgct 2940
 gcatactctt tgtcttcaaa cagcatgatg tccgatagtc ggggtgaattt tctccctatt 3000
 agcataacca taacgcctgt agcaaaaagga tctaaag 3037

<210> 145

<211> 1353

<212> DNA

<213> Chlamydia trachomatis

<400> 145

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 aagaataatc tctgatttag tctttttcat atgtgcccat cagctctgcc gtagctatga 120
 tatgtccgtc catagcttct aacagctgtt ctttgggtcac tccttcttca tcggaaagca 180
 caacatcgag cgcataagca taaaagtaat agcgatgctt cgcactctgga gggcaaggag 240
 ggcagtatcc tatttctcca gcagtattta acccttggac agcaaaaatt tgtgctcctt 300
 ctgcaagatt agagactgca ggcgaaaagg tatacactat ccagtgtatc cacaacccat 360
 cctctcgaac actaggagga acatctggat cttcaacaat aagaacaaga cttttagcct 420

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<210> 146
<211> 1627
<212> DNA
<213> Chlamydia trachomatis
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<210> 147
<211> 1262
<212> DNA
<213> Chlamydia trachomatis
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<400> 147

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gtaaaagctc tttttaaaagg acggctattc attgctgaga tggattaat tttcccgtga 60
atatcacggg atacgtaggt ggcgtaatca tgatttccta ggcaagcaaa acagcctaag 120
ggcgcatgca gagaacatag gaaatgtttt aatctttcag gagtttctac tttagcgaga 180
cagacaaagt ctctgtgtaa tacaagaata tctggagaaa gagaagagat cttacgagat 240
acttttttta gaaaggcatc aggcgtcgag tggtttaggt gttaaaccga aatctgtata 300
atgcgaagcc catgaagatg agcaaatttt ttaggcagat tccaatttaa acgcgttact 360
ctcaataggt taggctctaa gtgattggcc caaacccatg tcaaacacagg tgctgctaag 420
atagttgtaa aagatacagt aatacccaca gaaacgaaca aaaagaatga actagttcct 480
catcttaaaag acgaggaaca cgtgagtc aaatctatttt attaatgat gtgttgagaa 540
accatttttg tcatattggaa catatcgata ggtttttcag ttccaaaaaac tttagccaat 600
ttatcatcgg gattgatatt acgtttgttt gtaggatctt gaaggctatt cttcttaatg 660
taatcccaca ttttcttaat gatctctgtg cgaggcatag gtcctgcacc aacgatggca 720
gctaaatcag cggatacgtt cacaggctgc atgaaagcag agttcttatt ttgactcatg 780
gatgactcct agttaagaa gatgataaga aaagtttagg gctcttccct cgcaactcct 840
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cctaagagaa gatcatgtaa ccatgagcgt gtttttagctg tcaccgccac cgtaattagt 1020
gaaataactg gcaaggaaaa tagctctttg aaaaagaaga gtttgaaagt ggatattttg 1080
cgaaagggtta gcaagattat gcatgagaat tttgacaaac gattggaact tttgcttgaa 1140
ggtttggtt taactcggag gtctctttga cccggaagga aaagaaaatg agttaagga 1200
attggaacag caggcgggtgc aagatggttt ttgggacgat gttgctcgtg cagctcgtgc 1260
cg 1262

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<210> 148

<211> 1596

<212> DNA

<213> Chlamydia trachomatis

<400> 148

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cagctccttt tttgttacga gtcgttgata atgagagagg gaaattgtta cctatagagc 120
aagagttact aaaaacaccg ttttttagcta aatgggtatg caaacagttt ttctgaacg 180
aaagactagt tgcttcaaaa agtttttttac aaacggttta tgatcatctt atgacaggct 240
ctacagcaag attacggctt cgtaatcgaa cagtttttggg aaaagctagg ggagtaatca 300
tagaaagtat atattgatag tgtttttggg gcttccctag tgggttcagc agattgctga 360
aagaaaaaca cttcttgttt tttatctcta taattagagg tttataaaca aaataataaa 420
atattttgat atattgaata attatctgcc tatttgatta gcattgtagt gagttttatg 480
gctaaagata aaaaaacaaa tccagaatcc aaaaaagtt ttctactgc ttttttcttt 540
ctcttgttcg gagtgtttt tggcgtagtc acagttcaaa actttttctc tgctaaaaag 600
gcttcggtag gcttcagtca tcaactcgaa catcttgtaa acctgaaatt actcattcca 660
gaagagagtc gcaagactgc cttgaacgat aatttagtgt catttagtgg tcgtttccgc 720
gaggtgggtc ctgctgaagg tcagggttcgg tatcaatata ttgatcttat tgaacgtaag 780
catcagatcg actttgagct ggaagaggcg agtaagtctt taacggtttt atcaaaagaa 840
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caagatcctg aagtgttttag tcgttgggtt gaaggcgcta aacaggaatg ggcagcattc 1500
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aagactttca gaagtgaaga gccaacgcct cattac 1596

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<210> 149
 <211> 2624
 <212> DNA
 <213> Chlamydia trachomatis

<400> 149
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 aaacgctgaa tctggagaac aactacaaga ttctacacaa tctaatagaag aaaatgccct 180
 tcccaatagt aatattgatc aatctaacga aaacacagac gaatcatctg atagccacac 240
 tgaggaaata actgacgaga gtgtctcatc gtctctgaa agtggatcat ctactcctca 300
 agatggagga gcagcttctt caggggctcc ctcaggagat caatctatct ctgcaaacgc 360
 ttgttttagct aaaagctatg ctgcgagtac tgatagctcc cccgtatcta attcttcagg 420
 tttagaagag cctgtcactt cttcttcaga ttcagacgtt actgcatott ctgataatcc 480
 agactcttcc tcatctggag atagcgctgg agactctgaa gaactgactg agacagaagc 540
 tggttctaca acagaaactc ctactttaat aggaggaggt gctatctatg gagaaactgt 600
 taagattgag aacttctctg gccaaaggaat attttctgga aacaaagcta tcgataacac 660
 cacagaaggc tctctttcca aatctgacgt cctcggaggt gcggtctatg ctaaaacatt 720
 gtttaaatctc gatagcggga gctctagacg aactgtcacc ttctccggga atactgtctc 780
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<210> 150
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 <212> DNA
 <213> Chlamydia trachomatis

<400> 150

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<210> 151

<211> 732

<212> DNA

<213> Chlamydia trachomatis

<400> 151

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<210> 153
<211> 3141
<212> DNA
<213> Chlamydia trachomatis
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<211> 2275
<212> DNA
<213> Chlamydia trachomatis
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<210> 155

<211> 1909

<212> DNA

<213> Chlamydia trachomatis

<400> 155

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<210> 156

<211> 1157

<212> DNA

<213> *Chlamydia trachomatis*

<400> 156

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